THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XVII. No. 422—20th YEAR.] LONDON, DECEMBER 22, 1868. [Subscription per Ann. 15s. in Advance / 18s. Credit.] Price 8d. Unstamped.

RAMSAY'S NEWCASTLE CANNEL COAL. Analysis by Dr. FYFE, M.D.:—
9746 cubic feet of gas per ton of coal.
26-candle gas.
13½ cwt. coke per ton of coal.
N.B.—Ramsay's Cannel most resembles the Marquis of Lothian's Cannel, but superior as to coke.
RAMSAY'S PATENT CONDENSED COKE,
DO. GARESFIELD COKE.

RAMSAY'S FIRE-CLAY ARTICLES.
GAS-RETORTS, introduced 1828.
FIRE-BRICK WORKS, established 1804.
FIRE-CLAY SANITARY PIPES, CHIMNEY-TOPS, and all Goods made of Fire Clay.
The Fire Clay is worked from Blaydon Main Colliery, is of excellent quality, and no expense spared in perfecting every article.
The FIRE-BRICKS (marked "RAMSAY") are to be seen in all parts of the world, and the works are the most extensive in the Kingdom.
Manufactories: DERWENTHAUGH, SWALWELL, and HEBBURN QUAY. Offices: BROAD CHARE, NEWCASTLE-UPON-TYNE. Address, G. H. RAMSAY.

GEORGE GLOVER & CO.,
Patentees of the Standard Gasometers for the Government, and of the
IMPROVED DRY GAS-METERS.
These Meters are warranted to measure correctly and not to vary, and have come into general use more rapidly than any Meters hitherto manufactured.

PARIS EXHIBITION, 1867.
THE TESTING-HOUSE REPORTS.
The Reports prepared for the Science and Art Department, under the direction of the Lords of the Council, detail the arrangements made for testing the gas apparatus exhibited. In the testing-house erected by the Special Committee appointed to further this object a gasholder was constructed by Mr. G. Glover, being a *fac simile* of that produced and patented by him in 1860, and deposited in the Exchequer, under the provisions of the Sales of Gas Act, and British manufacturers of gas apparatus were invited by advertisement, and by direct application, to forward worthy objects for exhibition. Mr. G. Glover was, however, the only manufacturer who sent Meters to be tested. The report states that, as "Mr. Glover is a manufacturer of Dry Meters only, no opportunity presented itself of comparing their accuracy with that of Wet Meters under various circumstances, but the perfection to which that maker has brought his Meters prevents the possibility of those extravagant errors which are well known to exist where Wet Meters are used."
Particulars and lists of prices forwarded on application to Ranelagh Works, Ranelagh Road, Pimlico, LONDON, S.W.; 15, Market Street, MANCHESTER; or 97, Boulevard de Magenta, PARIS.

COWEN'S PATENT FIRE-CLAY RETORTS.
JOSEPH COWEN and CO.,
BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,
Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS RETORTS and OTHER OBJECTS in FIRE-CLAY," and they have also been awarded in the INTERNATIONAL EXHIBITION of 1862, the PRIZE MEDAL for "GAS RETORTS, FIRE-BRICKS, &c., for EXCELLENCE of QUALITY."
J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts in the United Kingdom; and orders for Fire-Clay Retorts of all shapes and dimensions, Fire-Bricks, and every other article in Fire-Clay are promptly executed at their Works as above.
COWEN'S GARESFIELD COALS.
Coal Office,
QUAY SIDE, NEWCASTLE-ON-TYNE.

FIRST PRIZE IN THE PARIS EXHIBITION.
JOHN RUSSELL AND CO.,
THE OLD TUBE WORKS,
CHURCH HILL, WEDNESBURY;
ALMA WORKS,
WALSALL, STAFFORDSHIRE;
and 69, UPPER THAMES STREET, LONDON,
Original Manufacturers of Wrought-Iron Gas Tubes and Holders of the present Patents; Inventors and First Makers of LAP-WELDED FLUES for Steam Boilers.
J. R. and Co. make all kinds of Tubes and Fittings for Gas, Steam, and Water, and the largest Orders may be executed in a few days.
Gun Metal, and all other kinds of Cocks, Stocks, Dies, and Taps, Galvanised Tubes, &c.
N.B. All Goods thoroughly Tested before sent out, and Warranted.

JOHN BENT & SON,
WET AND DRY GAS-METER
AND
STREET-LAMP
MANUFACTURERS,
BELL BARN ROAD, BIRMINGHAM.
ESTABLISHED 1830.
All materials found for the alteration of Public Lamps for lighting with the Rod. Regulators with Lava Burners.

BLAYDON BURN AND LOW BENWELL FIRE CLAY RETORT AND FIRE-BRICK WORKS, NEAR NEWCASTLE-ON-TYNE.
WILLIAM COCHRAN CARR begs most respectfully to thank the Metropolitan, Provincial, and Continental Gas Companies for their patronage for several years past, and to intimate that he has rebuilt and enlarged his extensive premises for the Manufacture of CLAY RETORTS; and that he is now prepared to execute the largest orders with punctuality and despatch. Orders for FIRE-CLAY RETORTS, of all shapes and sizes, FIRE-BRICKS, and all other Articles in Fire-Clay, executed on the shortest notice, and on the most reasonable terms.
London Agents: JAMES LAWRIE & CO., 63, OLD BROAD STREET, CITY, LONDON.

THE "LOTHIAN" CANNEL COALS.
These Cannels are extensively used in the Gas-Works of Edinburgh, where the illuminating power of the gas is the highest in Britain.
The yield per ton is 12,573 cubic feet; illuminating power 33·8 standard candles; coke per ton 1046 lbs.
Ports of Shipment, in the Firth of Forth.

BO'NESS CANNEL COALS—This Cannel is largely used in gas-works where, in addition to high illuminating power, there exists a demand for superior Coke, it being the best Coke-producing Cannel of all Scottish Cannels. It yields about 11,000 cubic ft. of 25 standard candle gas per ton.
Ports of Shipment, either the Forth or the Clyde.
For prices and other information, apply to Mr. JOHN ROMANS, C.E., 53, Frederick Street, EDINBURGH.

NOTICE.
LESMAHAGO GAS OR CANNEL COAL.
JAMES FERGUSON & CO., Auchinheath Colliery, Lesmahago, and the NITSHILL & LESMAHAGO COAL COMPANY, AUCHINHEATH AND SOUTHFIELD COLLIERIES, LESMAHAGO, sole Proprietors and Producers of the above celebrated GAS COAL, beg to intimate to Gas Companies and other consumers that, having reason to suspect that Cannel or other Coal of very inferior quality, both as regards the quantity and illuminating power of the Gas, has frequently been mixed with and sold under the name of "Lesmahago," they have now appointed Messrs. JAMES LAWRIE & Co., of 63, Old Broad Street, LONDON, E.C., sole agents for England; and Messrs. LA COUR & WATSON, of LEITH, sole agents for foreign markets; and, in order to prevent a recurrence of the frauds named, they request that all purchasers will send their orders through the above-named firms. Orders for other than the above-named markets may be forwarded direct to either of the Proprietors.
The Proprietors will, in future, use their own forms of bills of lading, and also issue certificates of origin, signed, as the case may be, either by JAMES FERGUSON & Co., or by the NITSHILL & LESMAHAGO COAL COMPANY; and they request all consumers purchasing Lesmahago Coal to demand such a certificate for each cargo, and to observe that it corresponds with the bill of lading.
Auchinheath, Lesmahago, March, 1868.

MEDAL AWARDED, EXHIBITION, 1862, "FOR GOOD WORK."
THE IMPERIAL TUBE COMPANY, BIRMINGHAM,
MANUFACTURERS OF
WROUGHT-IRON TUBES & FITTINGS, BRASS & COPPER TUBES,
GALVANIZED & GLASS ENAMELLED TUBES & FITTINGS,
LAP-WELDED IRON & BRASS BOILER-TUBES, ETC., ETC.
☞ Sole Makers of "HUGHES'S PATENT TAPS," Strongly recommended for all High-pressure purposes.—Price List and Testimonials forwarded on application.

CROLL'S DRY GAS-METER,
PRIZE MEDALS. (INVENTED & PATENTED IN 1844,) PRIZE MEDALS.
LONDON, 1851; NEW YORK, 1853; PARIS, 1855.
COMBINING ALL THE LATEST IMPROVEMENTS,
MANUFACTURED ONLY BY
LONDON, 1862; DUBLIN, 1865; PARIS, 1867.
THE GAS-METER COMPANY, LIMITED.
238, KINGSLAND ROAD, LONDON, N.E.
A. ANGUS CROLL, C.E., Chairman. GEORGE RAIT, Managing Director.

FRASER'S PATENT RIBBED RETORTS.

The following are taken indiscriminately from a number of testimonials as to the merits of the Fire-Clay and Cast-Iron Ribbed Retorts:—

Gas-Works, Merthyr Tydfil, Sept. 2, 1868.

Sir,—We have had 15 of your Ribbed Clay Retorts in use at these works for the past twelve months. I am happy to be able to report favourably of them. It appears to me that the Ribs afford additional strength to the Retort, whilst they render the charge porous, so that the gas is more freely disengaged from the coal, and the deposit of carbon does not take place to the same extent that it does in plain Retorts. I believe the principle of construction applied to your Retorts may be adopted for Fire-Brick Retorts and Ovens, and with results equally beneficial.—I am, sir, yours faithfully, J. L. Cocker, General Manager.

Gaslight Company, Shrewsbury, Oct. 8, 1868.

Dear Sir,—In reply to yours, I beg to state that we have nine of your Cast-Iron Ribbed Retorts at present in work. As they retain to the last the original shape, and allow the heat to penetrate the charges more effectually than those known as plain ones, we consider they are the most economical and efficient in use.

Yours very respectfully,
A. C. Fraser, Esq. S. B. Darwin.

For further particulars, apply to A. C. Fraser, Gas-Works, Colchester.

TO GAS AND WATER COMPANIES.

SECOND-HAND
FIRE AND BURGLAR PROOF
SAFES.

Before purchasing send for
GRIFFITHS' MONTHLY LIST OF SAFES,
By Milner, Marr, Thos. Perry and Sons, Mordan, Price, Whitfield, and every eminent maker, at about half the price of new.
A guarantee given with each.
A large quantity of TANN'S SAFES from £2 10s.
Apply to Griffiths, 43, Cannon Street, E.C.

B. CARPENTER'S
IMPROVED
WOOD SIEVES FOR GAS PURIFIERS.

WORKS:
14, JOHN STREET, PENTONVILLE ROAD,
LONDON, N.

The above Sieves are used by the principal Gas Companies in London and the country. Their utility, durability, and cheapness combined, render them superior to all others.
Testimonials from Gas Engineers who have tested their qualities forwarded on application.
All orders punctually attended to, and estimates given if required.

NINETEEN YEARS PRACTICAL EXPERIENCE.

EDWIN BENTLEY,
RETORT SETTER,
29, LOWER HOPE STREET, HALIFAX,
YORKSHIRE.

Fire-Clay and Iron Retorts, Double and Single Grooved Brick Retorts, of every description.
Bentley's Improved D Brick Segment Retorts, 5 or 3 in one bed.
Testimonials and references on application.

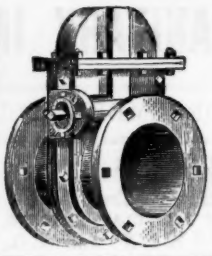
HARRIS AND PEARSON,
STOURBRIDGE.
PROPRIETORS OF
BEST GLASS-HOUSE POT & CRUCIBLE CLAY.
MANUFACTURERS OF
FIRE-BRICKS, GAS-RETORTS, AND FIRE-CLAY GOODS
OF EVERY DESCRIPTION.

Orders of any magnitude, for home and exportation, executed with all possible despatch.
N.B.—A quantity of Retorts in stock.
Circulars, 15 in. and 16 in. Ovals, 20 in. by 14 in.
D's, 15×13, 16×12, 18×14, 20×16, 21×14, 24×14.

WALTER MABON & CO.,
Engineers,
ARDWICK IRON-WORKS,
FAIRFIELD STREET, MANCHESTER,
MANUFACTURERS OF
IRON TANKS, GASHOLDERS,
GAS APPARATUS,
PIPES, VALVES, IRON ROOFS,
WROUGHT AND CAST-IRON GIRDER

DESIGNS, SPECIFICATIONS, & ESTIMATES FURNISHED.

REDUCED PRICES
OF
B. DONKIN & CO.'S
IMPROVED GAS-VALVES
WITH WROUGHT-IRON PINIONS,
From 2 inches to 18 inches, price 9s. 6d. to 12s. per inch diameter.



List of prices, with full dimensions of all sizes up to 36 inches, to be had on application.
These Valves are all proved on both sides to 30 lbs. on the square inch before leaving the works, and are always kept in stock.
VALVES MADE WITH OUTSIDE RACKS TO ORDER.
ALSO,
SCREW WATER-VALVES WITH GUN-METAL FACES.

B. DONKIN & CO.,
GENERAL ENGINEERS AND IRONFOUNDERS,
MAKERS OF STEAM-ENGINES,
BERMONDSEY, LONDON, S.E.

WALTER FORD,
159, GRAY'S INN ROAD, LONDON.
MANUFACTURER OF WET AND DRY GAS-METERS, STATION-METERS, GOVERNORS, &c. &c.

Sole Manufacturer of **PADDON'S PATENT STREET-LAMP REGULATORS**, for insuring any required consumption. These Regulators are in general and increasing use, and references can be given to Gas Companies who use them for every Lamp.

GEORGE ORME & CO.,
MANUFACTURERS OF
CONSUMERS GAS-METERS, STATION-METERS, GOVERNORS,
PRESSURE & EXHAUST REGISTERS,
PRESSURE-GAUGES, MINUTE-CLOCKS, PHOTOMETERS,
INDICES FOR GAS AND WATER METERS,
INDICATORS,
FITTINGS FOR RAILWAY CARRIAGES AND LAMPS,
AND EVERY DESCRIPTION OF
GAS, STEAM, & WATER FITTINGS,
ON THE MOST APPROVED PRINCIPLE.

WORKS: PARK STREET, OLDHAM.

TO MANAGERS OF GAS-WORKS.

MANN'S IMPROVED SCRUBBER.

See Description and Sketch in "JOURNAL OF GAS LIGHTING," March 31, 1868.

Messrs. WESTWOOD & WRIGHTS are prepared to submit estimates for the supply and erection complete of the above, either in London or the Provinces.
Messrs. W. & W. have already constructed several, which are now in successful operation, and give great satisfaction.
In cases where Scrubbers are already constructed, estimates will be submitted for altering and adapting to this principle.

Messrs. WESTWOOD and WRIGHTS,
No. 4, WHARF, CANAL ROAD, KINGSLAND ROAD, LONDON, N.
HOPE BOILER & GASOMETER WORKS,
BRIERLEY HILL, STAFFORDSHIRE, NEAR DUDLEY.

A GREAT SAVING OF TIME, LABOUR, & EXPENSE
IS EFFECTED BY THE USE OF
PRICE'S
PATENT COAL AND COKE BARROWS.

In addition to other testimonials the following has recently been received from one of the largest Gas Companies in London:—

London Gaslight Company, Nine Elms, May 18, 1868.

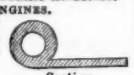
Dear Sir,—The Patent Coke Barrows are a great improvement, and a saving both in time and labour.
Yours truly, D. Watson.

They are in use in the Government, Metropolitan, and several country Gas-Works.
Manufacturers for London and South of England—PRIEST & WOOLNOUGH, KINGSTON-ON-THAMES.
Manufacturers for the Midland Counties and North of England—
THE COALBROOKDALE COMPANY, near WELLINGTON, SALOP.
Manufacturers for Ireland—J. EDMUNDSON AND CO., CAPEL STREET, DUBLIN.
Communications to be addressed to the Sole Agent, R. E. KEEN, 50, Claremont Road, Surbiton, S.W.; or either of the above.

INTERNATIONAL EXHIBITION,
1862. CLASS X.
PRIZE MEDAL
For excellence of Fire-Clay Gas Retorts, and "HONOURABLE MENTION" for good quality of Fire-Bricks.
WILLIAM STEPHENSON & SONS,
THROCKLEY,
NEWCASTLE-ON-TYNE.

JAMES NEWTON & SONS,
(Established 1820,)
FIRE-BRICK AND TILE MERCHANTS,
Wholesale and for Exportation,
FALCON DOCK, 78 AND 79, BANKSIDE,
SOUTHWARK, LONDON, S.E.,
DEPÔT for STOURBRIDGE AND NEWCASTLE FIRE-BRICKS, LUMPS, TILES, and FIRE-CLAY, and every Article suitable for
GAS AND WATER WORKS.

HANCOCK'S INDIA-RUBBER GAS-TUBING.
All sizes, from ⅛ in. to 4 in. diameter and upwards.
Also,
HORSE SINGEING APPARATUS, best make, with GAS-BURNERS, COMBS, and INDIA-RUBBER TUBING, all complete.
INDIA-RUBBER BAGS for GAS-MAINS.
WASHERS for GAS and STEAM JOINTS.
VALVES (pure solid Rubber) for STEAM-ENGINES.
PACKING (Elastic) for STEAM-ENGINES.
FLANGE TUBING, for excluding Draughts and Dust through WINDOWS, DOORS, and GLASS CASES.



Section.
Illustrated Price Lists on application.
JAMES LYNE HANCOCK,
Vulcanized India-Rubber Works,
GOSWELL MEWS, AND 266, GOSWELL ROAD
LONDON, E.C.

Established 1811.
READY & SON,
BILSTON STREET BRASS FOUNDRY,
WOLVERHAMPTON,
MANUFACTURERS OF
SUN BURNERS, GAS CHANDELIERS,
ALL LANTERNS, BRACKETS, PENDANTS
And every Description of
GAS-FITTINGS,
Including
MEDIÆVAL FITTINGS for CHURCHES, &c.
Large Pattern Books complete, with Book of Prices, 7s. 6d.

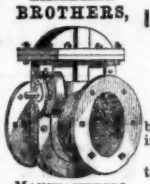
STOURBRIDGE FIRE-CLAY WORKS.
E. BAKER & CO.,
24 WHARF, HARROW ROAD, PADDINGTON, W.
FIRE-BRICKS, LUMPS, SQUARES, and TILES of all dimensions.
GAS-RETORTS always in stock.
GARDEN EDGINGS of various patterns.
ORNAMENTAL BUILDING BRICKS.
GRATE BACKS in various designs.
Contracts entered into to set Retorts, erect Furnaces, &c.
Shipments on the shortest notice.
Makers of A. C. FRASER'S Patent Ribbed Retorts and Brick Ovens.

HOPKINS, GILKES, & CO.,
LIMITED,
MIDDLESBOROUGH,
SUPPLY GAS AND WATER PIPES OF EVERY SIZE,
Plain, Turned and Bored, and Coated.
CAST-IRON RETORTS.
Castings for Gas-Works of every description.
EXHAUSTERS.
LONDON OFFICE: 95, CANNON STREET.

TO INVENTORS AND PATENTEES.
MR. W. H. BENNETT, having had considerable experience in matters connected with Gas, Water, and Sanitary Improvement, begs to say that he continues to assist Inventors in the perfection of their designs, and to obtain for them PROVISIONAL PROTECTION, whereby their invention may be secured for Six Months; or LETTERS PATENT, which are granted for Fourteen Years.
Patents completed, or proceeded with at any stage, thereby rendering it unnecessary for persons resident in the country to visit London.
Patents procured for Foreign Countries.
Information as to cost, &c., supplied gratuitously upon application to the advertiser, 42, Parliament Street, WESTMINSTER. [Office of the JOURNAL OF GAS LIGHTING, &c.]

Trade Mark. **THE MEDAL FOR 1862.**
THE ONLY PRIZE MEDAL AWARDED FOR TUBES AND FITTINGS.
CROWN TUBE-WORKS,
WEDNESBURY STAFFORDSHIRE.
WAREHOUSE—81, UPPER GROUND ST., LONDON.
JAMES RUSSELL & SONS,
Patentees and First Makers of Wrought-Iron Tubes.

LAMBERT BROTHERS,



MANUFACTURERS,
WALSALL.
REDUCED PRICES OF
IMPROVED GAS-VALVES
WITH WROUGHT-IRON PINIONS.
2, 2½, and 3 in.... 12s. per in.
4 in. to 6 in. ..... 11s. „
7 in. to 12 in..... 10s. „
These Valves are all proved on both sides to 30 lb. on the square inch before leaving the works.
Valves made with outside racks to order.
Also Water-Valves, with gun-metal faces and gun-metal screws.

TO GAS COMPANIES AND THE TRADE.
J. DEFRIES & SONS,
MANUFACTURERS OF
CRYSTAL, BRONZED, & ORMOLU CHANDELIERS;
IMPROVED CRYSTAL STAR & SUN LIGHTS;
VESTIBULES,
RON BARREL, COMPOSITION TUBING,
AND
GAS-FITTINGS OF EVERY DESCRIPTION.
WORKS:
LONDON, BIRMINGHAM, AND PARIS.

Special Designs prepared in perfect accordance with architectural arrangements. Estimates furnished for the Lighting and Fitting up of Theatres, Music-Halls, and Public or Private Buildings with Gas.
GAS MOONS OF THE NEWEST DESIGNS.
The Patent Gas-Regulator & Purifier reduced to 6s. 6d. per Dozen.
Pattern Books of Gas-Fittings, Crystal and Ormolu Chandeliers for 1868, are now complete.
CITY SHOW-ROOMS & MANUFACTORY,
147, HOUNDSDITCH.

THOMAS EDINGTON & SONS,
PHŒNIX IRON-WORKS,
GLASGOW,
Manufacturers of all kinds of
GAS AND WATER PIPES,
Branches, Bends, Water-Traps, Tank-Plates, Valves, and general Castings. Also
RAILWAY CHAIRS & SLEEPERS,
AND
GRIFFIN'S PATENT PERMANENT WAY.
London Office, 63, Old Broad Street.

BELGIAN CLAY RETORTS.
J. SUGG and CO., late ALBERT KELLER, Ghent.—The removal of the import duties on Earthenware permitting the entry of Clay Retorts into England, Messrs. Sugg, of Ghent, beg to draw the attention of the Gas Companies of London, and other Cities, to the very superior quality of the RETORTS manufactured by them. They can be made of any size, in one piece, and of any form. The price will be in proportion to the weight, and very moderate in comparison to their value.
Communications, addressed to J. SUGG and CO., GHENT, will receive immediate attention.

C. & W. WALKER,
IRONFOUNDERS,
MIDLAND IRON-WORKS, DONNINGTON,
NEWPORT, SHROPSHIRE,
CAST EVERYTHING USED in GAS-WORKS;
MAKE AND ERECT GASHOLDERS
OF ANY MAGNITUDE;
CAST-IRON GASHOLDER TANKS,
PIPES, & LAMP COLUMNS.
They ask especial attention to their
Important Improvements in Purifiers,
CONDENSERS, SCRUBBERS, & IRON ROOFS.
WALKERS' GAS-VALVES,
WOOD PURIFIER GRIDS,
PORTABLE STEAM BOILERS for GAS WORKS
ETC.
LONDON HOUSE:
8, FINSBURY CIRCUS, LONDON, E.C.

W. J. HOLLANDS,
IRON MERCHANT,
31, BANKSIDE, LONDON, S.E.
SOCKET, FLANGE, HOT-WATER PIPES, AND ALL CONNEXIONS; RETORTS, HYDRAULIC MAIN, LAMP-COLUMNS, &c.; AND EVERY DESCRIPTION OF CASTINGS AND WROUGHT-IRON-WORK FOR GAS AND WATER-WORKS, STEAM, AND GENERAL PURPOSES.
N.B.—All goods kept in stock, and supplied at wholesale prices. Estimates given, and orders by post punctually attended to the same day.

JAMES OAKES and CO.,
ALFRETON IRON WORKS, DERBYSHIRE,
AND
WENLOCK IRON WHARF, 20, WHARF ROAD,
CITY ROAD, LONDON,
Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water-Works, including Iron Retorts, Socket and Flange Pipes, Bends, Branches, and Syphons of all sizes, Lamp Columns, &c., &c.
N.B.—Orders for Cast-iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention.
CHARLES HORSLEY, Agent.

JAMES M'KELVIE,
CANNEL COAL MERCHANT,
HAYMARKET,
EDINBURGH.
Established 1840.

FIRE-CLAY GAS-RETORTS, &c., CANNEL AND STEAM COALS.
WILLIAM FRASER, Inverkeithing (owner of the Works at which Fire-clay Retorts were first made), having greatly enlarged his works, can supply retorts and other fire-clay goods to any extent.
References can be given to managers of above a hundred Gas-Works whom he supplies.
WILLIAM FRASER ships COWDENBEATH PARROT COALS at Charlestown and Burntisland at 12s. per ton; and HALBEATH STEAM COALS, on Navy List, at 8s. 6d. per ton.

D. BRUCE PEEBLES,
Gas-Meter Manufacturer,
FOUNTAINBRIDGE
EDINBURGH.

J. T. B. PORTER & CO.,
GAS ENGINEERS,
MANUFACTURERS AND CONTRACTORS FOR GAS-WORKS
Of any extent at Home and Abroad,
GOWTS BRIDGE WORKS, LINCOLN,
AND
JOHN STREET, ADELPHI, LONDON, W.C.

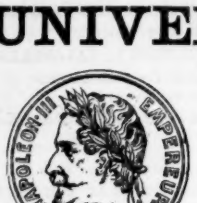
ALFRED PENNY, Gas and CONSULTING ENGINEER,
WENLOCK IRON WORKS,
21, WHARF ROAD, CITY ROAD, LONDON.
Mr. PENNY having had a large experience in the construction, alteration, and management of Gas-Works, begs to inform the Directors of Gas Companies that he may be consulted on all matters appertaining thereto. He also manufactures Gasholders, Purifiers, and all the various apparatus used in Gas-Works, and keeps in stock Retorts and Mouthpieces, Socket-Pipes, Bends, Branches, T-pieces, &c. &c.
Plans, Specifications, and Estimates prepared.

ADDISON POTTER,
WILLINGTON QUAY,
NEAR NEWCASTLE-UPON-TYNE,
Manufacturer of Clay Retorts, Fire-Bricks, and every description of Fire-Clay Good

THE

UNIVERSAL EXHIBITION OF PARIS,

1867.



SILVER MEDAL.

THOMAS GLOVER & CO.,

DRY GAS-METER MANUFACTURERS,

214 TO 222, ST. JOHN STREET, CLERKENWELL GREEN,

LONDON,

HAVE BEEN AWARDED THE HIGHEST PRIZE FOR

DRY GAS-METERS,

BY THE IMPERIAL COMMISSIONERS FOR THE

UNIVERSAL EXHIBITION, 1867.

WILLIAM PARKINSON AND CO.

(SUCCESSORS TO SAMUEL CROSLEY),

PATENT WET AND DRY GAS-METER MANUFACTURERS, &c.

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THE JOURNAL OF GAS LIGHTING,
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TUESDAY, DECEMBER 22, 1868.

Notes upon Passing Events.

IN the new Ministry there are four appointments that interest us quite irrespective of party politics, in which this JOURNAL takes no part. There is Mr. Lowe, Chancellor of the Exchequer; Mr. Childers, First Lord of the Admiralty; Mr. Layard, First Commissioners of Works; and Mr. Göschen, President of the Poor Law Board. The two first are wonderfully fortunate men, and Mr. Layard is not unlucky. Mr. Lowe, who is not the cousin of any one, and who has probably publicly and privately said as many witty and ill-natured things as any man living, has forced the doors of the Cabinet by a flow of strenuous eloquence of which few of his most intimate acquaintance ever suspected him. At fifty-seven, and in the prime of health and mental vigour, he has attained a position second to one only. Mr. Lowe's policy is decidedly "*thorough*," and he is just the man to sweep away with a relentless hand the costly remains of our old, elaborate, complicated Customs system. The great palace of import taxation that stands so much in the way between London Bridge and the Tower is an anachronism of the character that Robert Lowe will enjoy sweeping away. There are only six articles now subject to Customs duties, and we do not know how soon they may be reduced to three. The report of the committee, which recommended that the Customs establishment should be pensioned or compensated and abolished, and its remaining duties divided—the tax collection transferred to the Board of Inland Revenue, the statistical duties to the Board of Trade—is just the sort of work of destruction and construction that will suit the energetic logical mind of Robert Lowe. Bowels of compassion for vested interests are unknown to him. Utility is his favourite deity; as it ought to be in a Chancellor of the Exchequer. His predecessors have done the best part of the work in the reduction and abolition of taxes. Mr. Lowe is not the man to be satisfied without leaving his mark before he resigns the seals of office. If no great political gale disturbs the course of Mr. Gladstone's Cabinet, we may be sure that from the office of the Chancellor of the Exchequer will emanate a scheme that will reduce the Customs and Coast-guard to a very naked state of simplicity. Mr. Childers is, perhaps, the most fortunate man of the whole Ministry. Little more than forty years of age, he has already advanced to a higher post than was held by Earl Russell, son of the great Whig Duke of Bedford, in Earl Grey's Reform Ministry. Mr. Childers has a great deal to do at the Admiralty to satisfy the expectations of naval reformers, and can scarcely expect to succeed, considering that out of ten millions only about three relate to the constructive department. The rest is composed of the charges and wages of men and officers. Still, if he gets rid of every useless vessel, and puts our constructive department in efficiency and cost within 10 per cent. of our most eminent iron shipbuilders, he will have done enough to show he has been earnestly at work. The outside world know very little of Mr. Childers's abilities—they take him on trust; but his political friends must have a very high opinion of his reforming and administrative capacity, when they set him to encounter such a network of vested interest in abuses. Again we say Mr. Childers is a fortunate man. In the age of septuagenarian Cabinets he is almost a fortunate youth. A happy chance took him to Australia in his teens, in an official capacity; a happy chance enabled him to display his administrative abilities, in the post of a Cabinet Minister of the gold colony of Australia, at about the age that William Pitt was Chancellor of the Exchequer, because gold-digging prizes and profits made the honourable and arduous post beneath the consideration of the class of merchants and barristers of which colonial Cabinet Ministers are usually made; a happy chance sent him home, still young, with a pension sufficient for the independence of a man of economical habits; a happy chance sent him up to Parliament from Pontefract; once there his abilities did the rest. He found the stream and the audience on which and before which to display his natatory powers. Mr. Layard once seemed on the same high road to fortune when his Eastern travels and Crimean experience made him a personage. It was a great rise for a man who tried to be an attorney before he made a success as a traveller and author; but Mr. Layard did not succeed, except in offending a great many people, as Under-Secretary for Foreign Affairs, and he has now brought his undoubted knowledge and taste in things artistic to regulate the public buildings of London, and arrange business with the Metropolitan Board of Works. It is to be expected that Mr. Layard will have no mercy on the feelings of the inhabitants of Hamilton Place, and very little sympathy with the conservative and pettifogging red-tapists of the Woods and Forests. The mean and hideous monotony of Regent Street must be a great torment to Mr. Layard's cultivated mind. There is room for a very patent reform in London street architecture, if he will pass an Act to enable the lessees to alter and improve the elevations of the Regent Street shops, now

squat stucco. For an example of what might be done, look at the Conduit Street extension and elevation of Lewis and Allenby's shop. Mr. Göschen, the youngest member of the Cabinet, who has not hitherto realized the expectations excited by his early promotion in Lord Russell's last Ministry, has the most difficult task of all—to bring our much-abused Poor Laws into a system for keeping down instead of cultivating pauperism. The numerous unregulated charities of the country, and especially of the metropolis, are creating a class of professional beggars who elbow out and trample on the rights of the deserving poor. Mr. Villiers displayed the inefficiency of an idle, obstinate, and very ill-tempered man. Mr. Göschen will indeed be a political wonder if he produces any satisfactory reform out of the most complicated part of the parochial system.

The Metropolitan Board has been confessing its destitution. It is no matter. The Board owes too much money to stand still. The public will find out presently that, if it wants cakes baked to its mind, it must pay for them. Time and discussion will create a more healthy public opinion. A specimen of the unreasonableness of a certain class of ratepayers may be seen in the shop windows of Clerkenwell and Islington, in the shape of a petition to Parliament against the financial and other arrangements of Finsbury Park. This park will contain about 100 acres of available space; it is of an oblong shape, about a mile long, and wide enough for a great many games of cricket. Considering its distance from dense populations, it is never likely to be inconveniently crowded, especially as its undulating shape increases the apparent expanse. In addition to the 100 acres, the Metropolitan Board, being short of funds, propose to devote some 30 acres to building purposes, so as to defray the cost of ornamental arrangements. Thereupon a fierce agitation has arisen, to compel the Board to use all the land for park purposes, from the very class of people who protest against an improvement-rate. More parks are required, and more small open spaces; but, if the Board is to be prohibited from making money by creating valuable building ground, and if an improvement-rate is not to be granted, where are the needful funds to come from?

A correspondence in the daily papers has called attention to the injury which our trade in jewellery has sustained from being under the control of a private or City livery company, responsible neither to Parliament nor any department of Government. The Goldsmiths Company has the privilege of marking gold jewellery, with the idea of informing customers of its value. Practically, the hall mark does nothing of the kind. But a wealthy City company—a gorgeous and liberal host to great personages—can be indifferent to the complaints of tradesmen and the obscure customers of tradesmen. Surely the time has arrived when the value of gold ornaments would properly be estimated and marked by a responsible officer connected with the Mint. Some young M.P., anxious to distinguish himself, may earn a useful reputation by making the proceedings of the Goldsmiths Company the subject of an inquiry by a select committee.

M. Edouard Bornvilliers, in an article entitled "Paris, the "Governor of France," has shown that that city, like our own metropolis, has its troubles in no small degree created by railroad facilities, and by those street improvements which render Paris the admiration of the whole civilized world. The population amounts to above 1,800,000, of which nearly 1,110,000 are born out of Paris. Workmen and their families figure for 740,000; domestic servants, in and out of place, and door-keepers (*portiers*), for 216,000; students, for 17,000; and people with no recognized calling, for 50,000. Paris is also the greatest manufacturing city in France, therefore liable to disturbances in cases of a slackness of trade. "There are "100,000 souls in Paris who live from hand to mouth, and "know not each evening how they shall get the bread of the "next day. . . . The criminal class becomes daily more "numerous; *the number of police agents is continually increased.* "The professional criminal naturally flies to a large town, because "there he has the most to steal and the best chance of escape "after stealing. . . . Above 12,000 persons are discharged "from our prisons every year, and, as a matter of course, the "greater number live or vegetate in Paris. Vagrants abound, "and are collected by hundreds from the streets every evening. "Beggars find their best harvest in Paris, and every ruined "man and unwedded mother gravitates towards the capital of "wealth and pleasure. The scum arrives not only from "France but from frontier foreign nations. From Hesse and "the Grand Duchy of Baden come a number of gentry who "settle the question of the Rhine boundary in their own "favour, and insist on being citizens of France." The provinces do their share towards crowding Paris with most undesirable inhabitants. The mayors of provincial towns systematically despatch to the capital any one particularly dangerous or destitute. The charities of the city are splendidly endowed, and never send in a bill to the country. Formerly the municipal officers sent back the rural paupers in convoys on foot, under charge of a proper guard, with a starvation allowance of three-halfpence a league. Now they are sent by railroad, and, after a pleasant journey, return the way they came as soon as so inclined. Then they are sent back again; and so these pauper excursion trains are continually running. The masses brought in by railways have rendered almost impossible the formalities of *passeport* examination. The writers call out for the law of settlement, which we have all but abandoned. About 30,000 arrests are made every year in Paris, including every kind of delinquency, and of these only about 7000 are native-born Parisians. The budget of the public charity of Paris amounts to nearly a million sterling. The recipients of relief are divided as follows:—In hospitals, 96,704; *hospices* (refuges or workhouses), 9025; lunatics, 9444; poor relieved at home, 105,119; sick poor, 38,179; children assisted, 24,880: in all, 277,343. This is exclusive of the assistance distributed by numerous charitable associations. In France no one has a right to relief, and there is little encouragement, except from private religious associations, to leave work to become a professional pauper. The article from which we have quoted is political, not economical. The increase of roughs and paupers in London threatens only our purses and our comfort; in Parisian destitution and crime M. Bornvilliers sees the elements of revolution. He concludes with, "Paris makes revolutions, and France pays for them"—a democratic variation of "*Quicquid delirant reges, plectuntur Achivi.*"

The true British clodhopper is not more firmly convinced that the French are a lean race feeding upon frogs, than is the ordinary Frenchman that England is the home of the suicide—that the fogs of every November bring a harvest of self-drowned to the Thames. M. A. Legoyt has undertaken, in a digest of exact statistical returns, to show the comparative number of suicides in the principal states of Europe, and his paper proves clearly that gay, bright Paris, and not grimy, gloomy London, is the capital of the suicide. Thus in all England there are 69 suicides per million of inhabitants, and in London, 91; while in all France there are 110 per million, increased in Paris to 646! M. Legoyt gives the following comparison per million of the following states:—Saxe-Altenburg, 303; Denmark, 288; Royal Saxony, 254; Sleswig, 209; Holstein, 173; Mecklenburg Schwerin, 159; Hanover, 123; France, 110; Baden, 109; Norway, 94; Bavaria, 73; England, 69; Sweden, 66; Belgium, 55; Austria, 43; Scotland, 35; Spain, 14. In fourteen states the female suicides were 29 to 30 per cent. of the male; but in Spain they are 41, and in England, 37. Suicides become more frequent with men in proportion as they grow older, up to sixty or seventy years; women seek voluntary death less frequently after thirty years of age. Perhaps the truth is that money drives most men, and love most women, to despair. Contrary, again, to French axioms, cold weather is unfavourable to suicide, while summer heat promotes the crime. This effect of climate is most evident in Spain, and least in Belgium. The mode of destroying life varies with the sex, but drowning and hanging are in favour with both. Men select in the following order:—Firearms, cutting instruments, smothering by charcoal, and other miscellaneous methods, and leaping from heights. Women select poison, drowning, cutting instruments, charcoal fires, &c., and very rarely firearms. In Denmark, hanging is the favourite method, which is more rarely adopted in Spain; in France, drowning is preferred; in England (owing to the goodness of knives, perhaps), cutting or stabbing; in Spain, a leap from a height is the last resource. In the United States, firearms are most commonly used; in Denmark, rarely. Poison is much used in England and the United States. Smothering by charcoal is most frequently adopted in France and Spain; two-thirds of the charcoal suicides in France are in the department of the Seine. Few drown themselves in winter, but hanging takes place all the year round. Firearms are usually employed from twenty-one to thirty years of age; sharp cutting instruments are used frequently up to fifty years of age, and then the use diminishes to the close of life. Poison is the favourite death

of youth. Married women commit suicide much more rarely than married men, which may be accounted for on the ground that the passions—love, jealousy, &c.—are the prevailing cause of suicide with women; with men, more frequently failure or disappointment in money matters, or drunkenness. In France, it seems, from returns made in 1865-66, out of 100,000 suicides agriculture gave 9·0; manufactures and commerce, 12·8; the liberal professions, 21·8; without any known calling, 59·6. The general impression is that the crime of suicide is increasing. M. Legoyt attributes this calamity to the discontent produced by the spread of education, and the consequent desire for wealth and power; to the effects of wars and revolutions; and, above all, to the numerous failures of joint-stock companies which have absorbed the savings of humble tradesmen and artisans. In a word, suicide is one of the diseases of civilization. The noble savage never slays himself, but knocks on the head the squalling brat or the aged and useless father or mother.

The question of secondary as distinguished from primary education has lately received the attention of the Imperial Government of France, and several important changes or reforms have been decided. It is easy to change in France. The decree of the Minister of Education is carried out simultaneously, and without question. In England, when the complete scheme of education, shadowed forth in the Education Commissioners Report, is introduced in the shape of a Bill to the House of Commons, members of very advanced opinions on theoretical questions will be stiffly opposing any interference with the vested abuses of the boroughs they represent. There were 35 lyceums, as secondary schools are called in France, in 1809; in 1830, 38; in 1848, 53; and in 1868, 81. The numbers of the scholars have increased from 21,000, in 1850, to 36,000 in the present year. Since an alteration in the law in 1850, private schools had diminished to the extent of 168 establishments, with a total increase of 500 pupils, while ecclesiastical schools had increased by 22 establishments, with an increase of over 13,000 pupils. So the Church gains ground in France; but out of 836 schools, 640 were founded and managed by the State. The State undertakes to form the opinions, if not the character, of the pupils. At the same hour the same class in every lyceum reads the same page of history, edited according to Imperial views. Each pupil pays about £30 a year, and costs about £34; the balance being provided by the State, the *communes*, and the *départements*. In England it is complained, not without reason, that the boys at our great public schools, and others in imitation of them, have too many holidays, work too few hours, and spend too much time in cricket, football, rowing, and other athletic sports. In France, on the contrary, it is said that they work too many hours of the day, and do not understand or like any rude games. M. Paul Rousselot says, in the article from which we are quoting: "It is a fact "that physically the French race has deteriorated. It has "become necessary to diminish the standard of height for the "conscription, and the Minister of Education has noticed that "one-fourth of the Polytechnique School wear spectacles, and "are under the average height." This is not surprising when we learn that pupils from eight years old to eighteen have to work, Sunday and Tuesday excepted, ten hours and a half every day, and have only an average of two hours a day for recreation, of which active sports form an insignificant part. The boys live within barrack walls. "Our scholars are bar-"racked too much (*trop casernés*); the promenades on holi-"days are not sufficient to change the physical and moral "atmosphere of the school." Every one, says M. Rousselot, who has watched the playground of a lyceum, must have been struck with the melancholy spectacle it presents. The very young boys play; the others only walk and talk, to the waste of physical strength and *deterioration of morality*. The Minister of Education has determined to establish a gymnasium in every lyceum, and to make its exercises obligatory on every class from the ninth to philosophy. Although there is no difficulty in getting English boys or men to play, the practice of scientific gymnastics should be introduced into all schools, for the benefit of the very young and weakly as well as for the muscular training of all. In every large school, since fagging became a dead letter, there are a number of boys who avoid every kind of exercise. Many other changes are contemplated in the ten years which form the course, commencing at nine years old, of a complete French education—amongst others, to diminish the three daily classes of the younger pupils from two hours to one; to execute less writing, and give more time for reading; to no longer make the composition of Latin verse compulsory; to defer the study of Greek for two years. These changes will, no doubt, receive the attention of our educational reformers.

DESTRUCTIVE EXPLOSION IN A SUBWAY.

A REMARKABLE illustration of the danger of subways, and of the disastrous effects that may result from them when constructed in populous towns, recently occurred at Toulouse. Some alterations had been made in the principal bridge which crosses the Garonne, for the purpose of lowering the roadway, and a subway to convey the water-main across the river was constructed under the causeway, built of brick and arched. Parallel to the subway, and at the distance of about 2 feet from the kerbstone, the gas-main was laid. It was embedded in solid earth, and was separated from the subway by a thick layer of hydraulic cement, on which the kerbstones were laid. Under such circumstances it was reasonably supposed there could be no danger of the gas penetrating into the subway; but the utmost precautions are sometimes unavailing, and the result has shown that there is always danger in underground passages in which gas can by any possible means enter and accumulate. On making the road over the bridge the gas-main was pierced by a pickaxe, and the gas escaped, which was perceived at the time. The workmen employed to repair the damage closed up a hole that was apparent at the top of the main, but they omitted to examine the bottom of it, embedded firmly in the ground, and to which the fracture extended. When the main was again covered over, the gas escaping from underneath penetrated through the soil, the cement, and the brickwork, into the subway, which appears to have been very imperfectly ventilated. There was thus accumulated under the footway of the bridge a large volume of an explosive mixture of gas and air. It is not stated how long the gas had been accumulating, but, as the new water-conduits had been but just completed, it could not have been many hours. There, however, was the explosive compound under the footway of one of the great thoroughfares of the town. Early on the first morning that the new water-main was put in operation, some workmen, on removing the iron plate that covered the entrance into the subway, perceived a very strong smell of gas, and, for the purpose of ascertaining whether they could enter with safety, one of them most foolishly lowered into it a lighted candle. A terrific explosion immediately occurred. The whole of the subway, and the causeway above it for a length of nearly 200 yards, were blown up, the materials being scattered about in all directions, and a portion of the parapet of the bridge was thrown into the river. Two persons were killed, and sixteen others were more or less seriously injured, three of them having been obliged to have their limbs amputated. It is a curious fact connected with this explosion that the precautions taken for greater security were indirectly the cause of the calamity. The gas and water mains were, previously to the lowering of the road, laid close together within a subway on the opposite side of the bridge; but French engineers have, from former experience, a prudent dread of gas-mains in subways, and, in making the alterations, the gas-mains were laid in the road, beyond the reach, as was supposed, of any danger. But the result proved that any underground passage into which gas can by possibility penetrate, may set all ordinary precautions for safety at defiance.

The amount of the damage is estimated at from 100,000 to 120,000 frs., and the question has arisen—Who is responsible? The result of the inquest was not known at the date of our correspondent's letter from Toulouse, but it was understood that the administration of "*Ponts et Chaussées*," and the individuals interested, will bring actions against the municipal authorities, who will endeavour to throw the blame on the gas company. There are two gas companies in Toulouse, a separate company having been established by a M. Cibiel, to compete with the Imperial Continental Gas Company, whose concession has recently expired. It was from one of the mains of the former company that the gas escaped and penetrated into the subway, and their servants were undoubtedly culpably negligent for not examining more thoroughly the fractured main when repairing the hole on the top. The Cibiel Company use Chameroy's sheet-iron mains covered with asphalte, and it may be made a charge against them that mains of that kind are not sufficiently strong to bear the rough usage to which they are commonly subjected. The main in question was pierced by a slight blow of a pickaxe, which would not have injured an ordinary cast-iron main, and it is said to have

been altogether in a bad condition, and ought to have been replaced. In other parts of the town, indeed, the mains of the same company have often been almost unavoidably damaged when any trenches were made near them, and it is stated that one of their mains was pierced in twenty places during the laying of telegraph wires under the pavement. Chameroy's sheet iron and asphalte mains have not, we believe, been used in this country, and the experience of their employment at Toulouse is sufficient caution against their introduction; but the important lesson gained from the disastrous explosion in that town is that, even under circumstances of greatest apparent safety, there is a lurking danger in subways which it is next to impossible altogether to take away.

Circular to Gas Companies.

The last day allowed by the Standing Order of the House of Lords for depositing printed copies of private Bills intended to be promoted in the ensuing session of Parliament was the 17th of this month, and that preliminary requirement usually eliminates the merely speculative from the *bonâ fide* applications. Mr. Beal's Bill, of which notice was given, for regulating the gas supply of St. James's, is not among those deposited, the notice having proved, as we anticipated, only a flash in the pan, for the sake of giving a temporary appearance of earnestness to his threatened fire. Whether any company was actually contemplated to carry out the project of lighting St. James's parish with gas to be supplied by the Chartered Company, or whether Mr. Beal conceived that he possessed sufficient strength to coerce the vestry into the adoption of his scheme, or to influence Parliament to grant extraordinary powers to such a company to extinguish the rights of the Western Company, must remain in doubt; but the fact that Mr. Beal, in his cooler moments, has not deemed it prudent to take any further steps in the matter is self-evident, and we may congratulate him and the Western Company that they have thus been saved further trouble and expense. Another notice of the *bonâ fide* character, of which we previously expressed some doubt, has come to a premature end. The promoters of the proposed new gas company at Oxford appear to have had their further progress arrested by the determination of the existing company to apply for the additional protection of modern legislation. The projected company have not lodged any Bill, and we believe that the scheme is abandoned. In adopting that course they have been judiciously prudent, as it must have been a hopeless attempt—even assuming they could have obtained the sanction of Parliament—to compete successfully with an established company manufacturing from 80 to 90 millions of cubic feet of gas per annum with a share capital of only £18,000.

We understand that the instructions of the gas referees, appointed by the Board of Trade, to carry out the provisions of the City of London Gas Act for testing the illuminating power and purity of the gas supplied by the City companies, have been prepared, and that the form of accounts to be arranged by the auditor has been settled, and that they will be speedily published. The gas examiner, however, has not yet been appointed by the Common Council, and until they fulfil that duty, which the Act imposes on them, the machinery provided for the protection of the public cannot be brought into operation.

An important case, relating to the construction of certain clauses of the Metropolis Gas Act, 1860, was brought before Mr. Cooke, the presiding magistrate at Clerkenwell Police Court, on the 12th inst., a report of which appears in another column. The facts were these:—A beer-house keeper, who had fitted up his premises at considerable expense, applied to the Chartered Company for a supply of gas. Before giving it security was required, and ultimately the company agreed to accept a promissory note for £5, payable on demand. Within two months afterwards, before any gas-rent was due, the company applied for immediate realization of the promissory note. Their customer required some notice to enable him to pay it, but that was refused, and two men in the company's employ proceeded at once to cut off the supply of gas. The company were then summoned, under the 17th clause of the Metropolis Gas Act, to answer the complaint of having wilfully failed to furnish a supply of gas, by which they were rendered liable, on a summary conviction before a magistrate, to pay to the consumer 40s. for every day after the expiration of seven days that the failure to supply continued. There is no express provision in the Act which exactly meets the case. It was admitted that no rent for gas was due, but even in that case a notice of 24 hours would be required before the supply of gas could have been legally stopped, according to the 17th section of the Gas-Works Clauses Act, and the promissory note had been accepted as security. It was contended on behalf of the company that the promissory note had been in fact dishonoured by the refusal to pay on demand, and that the consumer was in the position of having ceased to give any security, without having which they were not bound to supply gas. But the gas had been supplied, and the main question was whether, assuming the security to have ceased, the supply could be cut off without notice. It was further contended that the 17th section of the Metropolis Gas Act did not apply to the case, for, according to the words of that section, the penalty for failure is to be imposed, "if the gas company, not being entitled to "require, or not having required, any security, wilfully fail for "seven days after being thereunto required in writing by any "consumer," &c., whereas the gas had been supplied, and it was the security that had failed. Mr. Cooke, in pronouncing his judgment, expressed the opinion that the whole tenour of the Metropolis Gas Act, and of the Gas-Works Clauses Act incorporated with it, contemplated and required notice to be given before the supply of gas was discontinued after it had been once supplied. The 21st section of the Metropolis Gas Act, relating to contracts, he thought, showed clearly that it was the intention of the Legislature that notice should be given in all cases before the supply of gas was stopped, and that the 17th section was not limited in its meaning to the laying and connecting of pipes, but included giving a supply of gas in the first instance, and that it must, according to common sense, be taken to mean the continuous supply of gas. He, therefore, fined the Chartered Company 10s. per day from the day the gas was cut off to the date of the summons, with costs. We hope that this decision will tend to diminish the resort to the power of cutting off the supply of gas to enforce demands on consumers, which in the case brought before the Clerkenwell Police Court appears to have been exercised in a very arbitrary manner. The decision in that case is applicable to a great extent to all gas companies who are subject to the Gas-Works Clauses Act; but it does not, of course, affect companies who carry on their operations without statutory powers.

It is seldom that so humiliating a report is presented to any meeting of shareholders as was presented by the directors of the City of Moscow Gas Company at a special general meeting on the 2nd inst., a copy of which appeared in our last number. After the general meeting in May, the directors determined to examine the state of affairs at Moscow for themselves. Four members of the Board accordingly visited Moscow for that purpose, and the report was occupied principally with a statement of the results of their examination. So far as it was confined to a representation of facts, the report seems to be a very fair exposition of the state of the concern at Moscow, and a more deplorable condition of things could scarcely be conceived. Though the buildings of the gas-works were found to be extensive and strongly constructed, the working parts were in a most dilapidated condition. The retorts required to be reset, new mouthpieces had to be cast, and the works generally were out of repair, after little more than a year's working. The manufacture of gas under such circumstances had been carried on at a loss during the half year ending in June last. On every one of the public lights, as was stated at a previous meeting, there was a loss of £1 per lamp per annum. The number of them exceeded 3000, and the company are under obligation to the local authorities to increase that number 500 a year if required. There were 34,000 private lights, and 170 miles of mains, the leakage from which was consequently very great compared with the quantity of gas supplied. Such was the general state of the concern as represented by the four directors, and on their statement of facts full reliance may be placed. But on proceeding from facts to estimates they indulge in sanguine expectations, the illusory character of which is but too apparent. Though it is admitted in the report that there had been a loss during the last half year, it is estimated that, by remedying the defects in the manufacture, and by the prospective increase of the number of private consumers, the net profit of the year ending in June, 1869, will amount to £13,000; that it will be increased in 1870 to £25,000; and in 1871 to £35,500. On the strength of these estimated profits the unfortunate shareholders, whose paid-up capital of £608,476 is virtually lost, are invited to subscribe £530,000 more to relieve the concern from its difficulties.

The existing liabilities of the company are stated to be £478,049, in addition to which there are some further claims "of a most extraordinary character," and of "the most monstrous and unjustifiable kind," which the directors expect to be able successfully to resist. Any inquiry how so much money has been expended in lighting a fifth or sixth rate city was deprecated by the chairman, who ignored the fact that the Imperial Continental Gas Company, with a capital of £1,225,000 have lighted sixteen large cities on the Continent, three of which are important capitals. Something more than the explanation afforded was due to the noble lords, the baronets, the merchant princes, the bank directors, the gentlemen, widows, and spinsters, to the number of 500, who have subscribed, and it is to be feared have lost, upwards of £600,000. The reticence may be attributed to the possibility of inconvenient disclosures as to the relations between concessionaires, contractors, and the promoters of the company, which would damage the proposed issue of preference capital, hence it may be deemed expedient to let bygones be bygones. When the project was first launched we warned the public against the illusory character of the prospectus, and pointed out the onerous nature of the concession. The chairman, at a recent meeting of the company, *naïvely* represented that the conditions on which the concession could be secured were presented to him "all cut and dried," and must have been either accepted in their entirety or declined. It does not seem to have occurred to him that the concession with the obligations attached to it was worthless, and the leap in the dark was taken which has brought the City of Moscow Gas Company to the present hopeless condition. The concern being saddled with a mortgage of upwards of £300,000, at 12 per cent. interest, the prospects of the shareholders are poor indeed.

It is always satisfactory to notice reductions in the price of gas when proceeding voluntarily from gas companies as the result of increasing profits. A reduction of that kind has recently been made at Bath, the charge for the public lamps having been reduced from £3 per lamp per annum to £2 15s., and the price charged to private consumers from 3s. 6d. to 3s. per 1000 feet. Those prices are the lowest charged for gas in any town in the west of England, with the exception of Plymouth. The expenditure on capital account of the Bath Gas Company has been £115,655, and the gas and meter rental during the last six months amounted to £10,023.

We insert, in another column, an account taken from the Toulouse papers of a destructive explosion of gas in a subway in that town under circumstances which might be supposed to have rendered such an accident impossible. This accident justifies the prudence of the Metropolitan Board of Works in refusing to be responsible for any damage that might occur from the explosion of gas in their subways, though their witnesses on the parliamentary committee declared that such an explosion could not by possibility take place.

As we purpose reprinting in our next number the share lists of gas and water companies, we earnestly request the assistance of our readers in rendering them as correct and complete as possible, by their returning to us, on or before the 31st inst., the slips issued with our present number, so as to enable us to rectify any errors, and fill up the omissions in the list published on the 7th of January last; and that special advice may be forwarded to us of any changes that have taken place in the paid-up capitals, dividends, or value of shares, of which notice has not already been transmitted. Attention to these particulars is the more urged, as numerous corrections reached us after the publication of the last lists, which would have been duly made had they been sent in sufficient time.

Correspondence.

THE COKE TRADE.

SIR,—Storing coke at proper times and in proper quantities is productive of a more permanently healthy condition of the trade, and a higher average price, than could be realized by a determination to sell out at all cost.

In the supply of commodities not *compulsorily* made, the quantities sent to the market are limited by the demand, as indicated by the price; and if prices range so low as to leave no margin of profit, the supply is restricted until a rise in price again invites a larger influx. By this self-acting process the quantity brought into the market is regulated with great precision. On the whole there is not, on the one hand, superfluity, nor, on the other hand, scarcity.

But with gas coke, *which is compulsorily produced*, such a result can only be attained by keeping back the great superfluity which exists at one period of the year, to meet the great scarcity which exists at the other period of the year. And while it is not desirable at the end of the summer season to have a large, or indeed any, stock on hand, it is still less desirable to refuse a single customer his demand, or to subject him to delay and inconvenience in procuring it. Viewed as a money question, a mistake in having too much stock at the end of the summer is a lesser evil, both in its present and future consequences, than the mistake commonly made of not having sufficient. It must be, on the average, a serious disadvantage to the consumer to have coke at a very low price in the one part of the year, if that abundance is to be followed by the penalty of entire deprivation, or at least an insufficient supply, in the other part of the year. My experience convinces me that it is a serious drawback to the use of coke that a consumer should get it occasionally at 8s. per chaldron, or less, and a month or two later be called on to pay 12s., 14s., or even 16s. per chaldron. It might at first sight be supposed that although such extreme fluctuations would not suit the consumer, they might suit the producer. Best coke at 12s., 14s., or 16s. per chaldron really means short stock; and, in point of fact, the higher rates are *nominal* only. There really is not a sufficient quantity to sell at the higher rates, to obtain an average represented by *equal* quantities at 8s. and 16s. Coke at 14s. or 16s., or even at 12s., means that the seller cannot meet the demands of his customers, and that they will be unable to obtain all they need. They are, therefore, compelled to use another fuel, and thus very surely the demand for coke in the future is lessened. I think it is the experience of all managers of the coke departments of gas companies, that when coke is so scarce as to reach the price of 12s., 14s., or 16s., the *first effect* is to occasion a great loss of time to those who purchase it. It commonly occurs that carts, horses, and men wait for hours—sometimes the whole night—outside the factory, that they may, at least for the time, fulfil their previous engagements as to orders on hand. Such a loss of time at once adds several shillings per chaldron to the cost of the coke, and it frequently happens that even this waiting is ineffectual. Then they are directed to other places where they may possibly obtain the supply they need. At a moderate estimate such a scarcity of coke, producing this waste of time and wear and tear, operates, on the average, as an additional cost of 4s. per chaldron, such additional cost being an entire loss both to seller and consumer. The *next effect*, after present engagements on the part of the seller or consumer are fulfilled, is a great indisposition to use a fuel which cannot be at all seasons of the year readily procured, a ready supply to large consumers and manufacturers being a matter of essential importance.

I have dealt at some length upon the consequences of a scarcity of stock at certain periods of the year, because I believe that this part of the question has been overlooked. The inconvenience and annoyance of a large stock is palpable to the producer, but the inconvenience and serious loss to all engaged in a trade of large extent and importance, where supplies cannot be regularly depended upon, however large the demand may be, is none the less serious because it is not brought so prominently forward. Dealers are continually dismissed in the spring of the year, and without much thought on the matter such dismissal is supposed to indicate a healthy condition of the trade. But it is not remembered that such dismissal is the result of a diminished supply and scanty stock, not of an increased and buoyant demand; and that such diminished supply, producing loss of time in waiting and fruitless journeys, is not likely in the future to occasion an increased demand. I believe that the superabundant supply and low prices during the winter months are not in the nature of a counterpoise to the short supply and nominally high rates in the spring and summer months but rather that both are in the wrong direction for the interests of producer and consumer.

I conclude with one remark—viz., that if the average price of coke is to be raised, and the average is all that both parties are concerned about, coke should, as far as practicable, be supplied in quantities suited to the demand.

Example as to the Pecuniary Result of Storing Coke.

Present price (say in December) being, say, 12s.

For every 1000 chaldrons produced, instead of clearing out we store 500.

To clear out it would be necessary to reduce to 8s. per chaldron, and then we could not *with certainty* effect our purpose.

But say we *can* clear out at 8s., then 1000 chaldrons at 8s...	£400
Now we are selling 500 at 12s.	£300
And have 500 in hand, which (less waste and labour in storing) we could afford, to place us in the same position, to sell at 4s.	100
	£400
But the probability is that in the spring we should get 14s., and certainly 12s., per chaldron, the gain being 500 at 8s.	£400

And besides this large additional profit, we should pursue a method calculated to improve the future of the trade by having a fuel which could be supplied readily and regularly.

C. D. SAUNDERS.

12, *Gutter Lane, Cheapside, E.C., Dec.* 7, 1868.

Register of New Patents.

839.—Samuel Naylor, of Ravensfleet, in the parish of East Stockwith, in the co. of Lincoln, engineer to the Morton Carr Drainage Proprietors, for "*Improvements in apparatus for raising water.*" Patent dated March 11, 1868.

The improvements consist in mounting a wheel driven by steam power, or in other convenient manner, and having blades or arms upon it, in a narrow chase or passage, and leading the water to be raised from the lower channel into such chase or passage at a point under the axis of the wheel, so that the blades or arms, in place of striking the water as soon as they reach the level of the water in the lower channel, may not come in contact with the water until they are travelling horizontally, or nearly so. They also consist in the use of a jointed floating valve or flap at the entrance to the upper channels, to prevent the return of the water from the upper to the lower channel when the wheel is stopped.

883.—Thomas Spring Lake Beech, of Charlton, in the co. of Kent, for "*Improvements in engines for obtaining rotary motion by means of steam, water, gas, or other fluids.*" Provisional protection only obtained. Dated March 16, 1868.

This invention consists in constructing engines or apparatus in which the side surface of a wheel or disc is provided with or made to carry chambers, recesses, or grooves of a cup-like or other shape convenient for the steam or fluid to impinge against as it issues from the necessary number of ports or openings presented to them, and formed in or carried by the surface of a steam or fluid feeder, against which the side surface of the wheel is presented, the steam or fluid from such ports acting simultaneously, or otherwise.

891.—William Edward Newton, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements in the manufacture of illuminating gas in the distillation of hydrocarbons and the making of gaseous fuel for heating purposes.*" A communication. Patent dated March 16, 1868.

This invention consists, first, in the mixing of hydrocarbon and hydro-oxygen in a vaporous condition for the purposes of making an illuminating gas, or for the distillation and afterward condensation of hydrocarbons, or for producing gaseous fuel for heating purposes. Secondly, in superheating these mixed vapours before they are converted into a fixed or permanent gas, or are condensed for purification in the distillation of hydrocarbons. Thirdly, in mixing with the vapours of hydrocarbons and of hydro-oxygen (after they have been acted upon in the retorts) atmospheric air, for the purpose of swelling or increasing their volume, and aiding in their free burning when used either as an illuminating gas or as gaseous fuel. Fourthly, in cooling the air-mixed gas (before it goes to the purifier) for the purpose of depositing any portion thereof that may not have become a fixed gas, or which, not being a fixed gas, yet retains its vaporous condition. Fifthly, in the use of chloride of calcium as a purifying agent for removing the noxious compounds contained in the gas.

898.—Robert Smith, of Compton Road, Islington, in the co. of Middlesex, for "*Improvements in the means and apparatus for extracting foul air or gases from mines and otherwise.*" Provisional protection only obtained. Dated March 17, 1868.

This invention consists in attaching one or more pairs of bellows to the end of a pipe or pipes, the other end of which is in communication with the accumulated gas. In the case of a mine this pipe would, by preference, be placed in the shaft, the lower end, which may be flexible, communicating with the foul air or gas, the upper end being attached to the inlet-valve of the bellows, which may be of any suitable shape and size, according to the purpose for which it is required. When the bellows are extended, a partial vacuum is formed, which draws up the gas from below into the bellows, which gas, upon closing the bellows, is discharged into the atmosphere, or otherwise disposed of.

915.—Claude François Constant Cretin-Borne, of Glasgow, in the co. of Lanark, for "*Improved means or apparatus for ventilating or supplying air to mines and other places.*" Provisional protection only obtained. Dated March 18, 1868.

This invention consists in the employment of an exhausting-fan in combination with pipes as hereafter explained:—

A fan is fitted in a box, and rapid rotary motion is imparted thereto by any convenient machinery. The box has numerous orifices for the escape of air, and these orifices may communicate with a common upright tube. From the box a pipe, which is called the main-pipe, is carried down the mine-shaft, and led along the main gallery. From the main-pipe in the main gallery branch pipes are led to all the other galleries or workings; these pipes terminate at the end of their respective galleries, and are preferably trumpet-mouthed. It is found desirable to cover the mouths with wire or perforated screens, to prevent the entrance of light matters. The rapid rotary motion of the fan exhausts the air from all parts of the mine through all the branch pipes and the main-pipe into the fan-box, from which it escapes through the orifices before mentioned, while the pressure of the atmosphere at the top of the mine-shaft supplies fresh air to take the place of that exhausted at all parts of the mine, as just stated; perfect ventilation is thus ensured.

The invention further consists in combining with the fan and set of pipes before explained another set of pipes, which may be of smaller diameter, and which follow the course of the other pipes. This second set of pipes communicates with any convenient part above ground, and serves to establish or keep up a current of air in case the current through the shaft and galleries should be shut off by a fall of a portion of the roof, or otherwise.

921.—Charles James Appleby, of Emerson Street, Southwark, in the co. of Surrey, engineer, and Isaiah Riley, of Freeling Cottage, Freeling Street, Caledonian Road, in the co. of Middlesex, engineer, for "*Improvements in cranes or other machinery for lifting, lowering, and hauling by means of steam, gas, heated air, or other fluid pressure, and in the boilers or furnaces for generating the power for the same, such improvements being applicable in part for other purposes.*" Provisional protection only obtained. Dated March 18, 1868.

These improvements consist, first, in the use of one or more chains arranged so as to maintain a central strain on the piston, and actuate a shaft, on which are drums for varying the power, speed, or height of lift. The improvements consist, secondly, in the peculiar construction of piston which the inventors prefer to employ with the arrangement above described, and in other hoisting machinery, such piston being constructed or provided with or carrying one or more valves acting as a safety valve or valves in the event of a chain breaking, so that the piston will be maintained in equilibrium, and accident to the cylinder thereby prevented. By preference, the valve is formed on the end or in connexion with the end of the piston-rod, the piston carrying or forming the seat upon which the valve impinges. The improvements consist, thirdly, in the use of a self-acting valve in connexion with a brake. The valve for admitting the steam or other pressure to the cylinder is connected with a brake in such manner that, when the lever of the valve is released, thereby cutting off the steam, the brake is simultaneously applied. The improvements consist, fourthly, in an apparatus for economically governing the speed of working. The improvements consist, fifthly, in arrangements for generating steam or for heating air, as the means of actuating the machinery above described, or other machinery or engines; and when used for generating steam or hot air, in self-acting mechanism for regulating and maintaining the heat at any required degree, gas being employed instead of ordinary fuel. The improvements consist, sixthly, in the arrangement or means employed for swinging and regulating crane jibs, more especially those fixed on warehouses and similar structures.

923.—Benjamin Edward Reina Newlands, F.C.S., of 4, Malvern Terrace, Charlton, in the co. of Kent, for "*Improvements in treating and obtaining products from spent oxide of iron which has been used in gas-works or otherwise, to separate sulphur from sulphuretted hydrogen, and in the purification of sulphur obtained from such oxide of iron.*" Patent dated March 18, 1868.

This invention has for its object improvements in treating and obtaining products from spent oxide of iron which has been used in gas-works or otherwise, to separate sulphur from sulphuretted hydrogen, and in the purification of sulphur obtained from such oxide of iron. The sulphur can be dissolved out from spent oxide of iron by means of naphtha, mineral oils, benzole, or turpentine, but the use of such solvents generally leaves the oxide of iron in a state unfit for use in purifying gas or otherwise again to separate sulphur from sulphuretted hydrogen.

According to this invention the oxide is fitted to be so re-used by washing it with bisulphide of carbon, and by this means separating the remaining naphtha, mineral oils, benzole, or turpentine, and leaving the oxide of iron clear and fit for re-use. The bisulphide which the oxide absorbs by distillation is recovered. For this purpose it is preferred to use a cylindrical wrought-iron air-tight vessel about 6 feet high and 4 feet in diameter, provided with a false bottom a few inches from the real bottom; two man-holes, one at the top and the other on the side on a level with the false bottom; two pipes, one leading into the top and the other into the bottom, for ingress and egress of the bisulphide of carbon; a steam-pipe under the false bottom for blowing steam into the vessel; and a large pipe or still-head at the top, which is connected with a worm condenser. The impurities are extracted from the oxide in the following manner:—About one ton of the spent oxide from which the sulphur has been removed is placed in the vessel, and about twice its bulk of bisulphide of carbon is run on to it, and it is allowed to digest for a short time. The bisulphide is then run off into a distilling apparatus, and distilled so as to recover the bisulphide again. The small quantity of bisulphide adhering to the oxide is recovered by blowing steam through the mass when the bisulphide is volatilized and condensed in the worm condenser. The oxide left after the above treatment, or after the sulphur has been removed by bisulphide of carbon alone, contains (provided it was originally used for purifying coal gas) sulphocyanide of ammonium and other compounds of ammonia; these, according to this invention, are washed out with water either hot or cold, and the liquid so obtained is boiled with lime in an iron or lead vessel, the ammonia given off being passed through a pipe to the bottom of the vessel containing an acid, preferably sulphuric or hydrochloric. By this means a nearly pure salt of ammonia is obtained. Sometimes the sulphocyanide of ammonium contained in the water solution is converted into sulphocyanide of potassium or sodium by the addition of potash or soda instead of lime to the solution, and the ammonia given off as before is collected in an acid; the solution is evaporated and the sulphocyanide obtained in crystals. The oxide of iron left after the above treatment still contains cyanogen compounds, which are insoluble in water, and which are utilized as follows:—The oxide after it has been washed with water is placed in a tank having a false bottom, and to it is added from 5 per cent. to 10 per cent. of lime and about twice its bulk of water, and the mixture is stirred so as to mix it thoroughly. The mixture is allowed to stand for twelve hours, and the clear liquid is run off through a hole in the bottom of the tank. In this way a solution of ferrocyanide of calcium is obtained, which is either crystallized out or converted into ferrocyanide of potassium by the addition of enough carbonate of potassa to precipitate the lime in the solution as carbonate of lime; or there is added to the oxide from which the sulphur has been removed a certain quantity of lime and water, and it is boiled; or steam is driven through the mixture, and the ammonia evolved in either case collected in an acid after all the ammonia is given off. The mixture is allowed to settle, and if it is not sufficiently liquid more water is added. When the liquid has become quite clear it is run off by means of a syphon, and enough carbonate of potassa added to precipitate the lime in solution, and so

obtain a solution of ferrocyanide of potassium, which is crystallized out by evaporation; or there is added to the lime solution sulphuric or hydrochloric acid, and a proto or per salt of iron or both; or what has the same effect, a proto-salt of iron, and subsequently chloride of lime, in either of which cases Prussian blue is thrown down, which is then washed and dried for sale; or the Prussian blue so produced is converted into ferrocyanide of potassium by the addition of caustic potassa. The oxide of iron which remains after the lime and water treatment above described is fitted to be re-used for purifying coal gas by adding to it sulphate of iron, which combines with the excess of lime left in the oxide, forming oxide of iron and sulphate of lime. The oxide may be dried if requisite. When it is not desired to re-use the spent oxide of iron which has been used for the purification of coal gas, it is prepared to be burnt in the manufacture of sulphuric acid by washing it with a strong solution of sulphur in bisulphide of carbon, using by preference for this purpose an apparatus such as hereinbefore described. By this means tar and other impurities are separated, which if left in the oxide cause a large expenditure of nitre in producing sulphuric acid from it. When sulphur is separated from spent oxide of iron by means of naphtha, mineral oils, benzole, or turpentine, the sulphur remains much contaminated with the solvent. According to this invention the contamination is removed by treating it with bisulphide of carbon or a solution of sulphur in that liquid. The bisulphide of carbon is recovered by distillation whenever in the above processes a mixture of naphtha, mineral oils, benzole, or turpentine and bisulphide of carbon is obtained.

966.—Josiah George Jennings, of Palace Wharf, Lambeth, in the co. of Surrey, sanitary engineer, for "*Improvements in water-closets, and in apparatus for supplying water, and in sewers or drains for receiving the same.*" Patent dated March 21, 1868.

In constructing water-closets according to this invention there is employed at the bottom of the pan a valve closing up against a face, and held against it by a counterbalance weight sufficient to retain in the pan as much water as it is desired, but which, nevertheless, allows the valve to open and discharge any surplus water. This valve is held open when the handle of the closet is raised or moved, and the same handle then opens a tap or valve to admit water to the pan. When the handle descends or is replaced, the water supply tap or valve and the pan-valve close immediately.

969.—Edward Kenworthy Dutton, of 3, Smithy Door, Manchester in the co. of Lancaster, consulting engineer, for "*Improvements in valves employed to regulate the flow of water.*" Patent dated March 23, 1868.

This invention relates principally to the class of valves ordinarily known as ball valves, and usually employed to regulate the discharge of water into cisterns, and consists in an arrangement whereby the valve is not opened until a quantity of water—say, for example, 3 inches or 4 inches in depth—has been withdrawn from the cistern. The float is balanced by a tumbling weight in such a manner as that, supposing the level of the water to be falling, the weight will sustain the float until the said float is nearly out of the water, when the weight of the float will preponderate, and the balance-weight will move to the opposite side of the centre of motion, thereby allowing the float to fall and the valve to be opened; on the other hand, the weight will keep the float stationary during the rise of the water level until the said float is nearly submerged, when it will rise, and the weight will move into its former position.

998.—Frederick William Crohn, of 4, Cullum Street, Fenchurch Street, in the City of London, consulting engineer, for "*Improvements in apparatus for obtaining power from a fall of water.*" Provisional protection only obtained. Dated March 24, 1868.

According to this invention (which relates to the Jonvin or parallel flow turbine) the weight of the shaft and wheel is carried by means of a thrust bearing at a distance above the wheel, this bearing being such as is used with screw propeller shafts; that is to say, a number of annular grooves are formed in the bearing, and corresponding collars or flanges on the shaft fit into them, and on these collars or flanges the weight of the shaft and wheel hangs. In order to steady the wheel, another bearing is employed immediately above it, and this bearing is made with lining strips of hard wood, as is also practised in constructing the stem bearings of screw propeller shafts. This bearing is cast with or fixed to the casting with which the directing blades are formed, and this casting fits into a ring or socket in such manner that the wheel, the directing blades, and lower bearing may all be lifted together by tackle applied to the upper end of the shaft, so as to admit of the turbine being readily examined.

1002.—Joshua Antill, of Wandsworth, in the co. of Surrey, plasterer, for "*Improvements in stench-traps.*" Patent dated March 24, 1868.

According to this invention two diaphragms are placed, one above the other, in the interior of the trap, on opposite sides. These diaphragms may be of curved or other form, the upper one inclining downwards to about mid depth of the trap, sufficient space being left between the side of the latter and the diaphragm for the water to pass. The lower diaphragm is fixed near the bottom of the trap, and rises up behind the upper diaphragm, so as to form a kind of chamber in which sufficient water will always remain to prevent the escape of effluvia arising from the drain, while a free passage for the water is afforded behind the said lower diaphragm. A grating is provided, as usual, at the top of the trap, and it may be removed for the purpose of cleansing the trap at any time without any escape of effluvia taking place, the diaphragms being permanently fixed therein.

1031.—William Henry Saint Aubin, of Wolverhampton, in the co. of Stafford, machinist, for "*Improvements in and additions to cocks and taps for drawing off liquids and gases from pipes, casks, or other vessels, which improvements and additions may also be applied to cocks and taps for filling vessels.*" Provisional protection only obtained. Dated March 26, 1868.

On the pipe of the cock or tap, or that part which enters the cask or vessel, a screw-thread is made, and into the hole in the cask or vessel into which the pipe of the cock or tap is to be inserted is fixed a socket having in its interior a concave screw-thread, into which the before-mentioned screw-thread on the pipe of the cock or tap takes. The socket has a flange on its front end which bears against the outside of the cask or vessel, and through which screws may be passed to attach the said socket to the cask or vessel, or the said socket may be attached by means of a fly-nut inside the cask screwing on the socket. Inside the socket is a hollow plug, open at its front end, closed at its back end, and perforated with holes on its cylindrical sides. This plug has a screw-thread which takes in the concave screw-thread in the socket. The front end of the hollow plug may be square or any other shape, but, if cylindrical, it has a projection on its edge which engages with a corresponding notch or depression on the screwed end of the pipe of the cock or tap, and when the pipe is introduced into the socket and turned, it not only itself advances in the socket, but, communicating its rotary motion to the hollow plug, causes the plug to advance before it. Before the pipe of the cock or tap is introduced into the socket, the hollow plug is within the socket, and the perforations in its sides are consequently closed by the said socket, and no liquid or gas can escape through the said socket from the cask, vessel, or pipe. When, however, the cock or tap is screwed into the socket, the hollow plug advancing before it, and the perforations in its sides being no longer covered by the socket, the liquid or gas can pass through the said perforations to the tap. On withdrawing the tap, the hollow plug is brought into the hollow socket, and its perforations closed. The tap may be thus introduced into and withdrawn from the cask, vessel, or pipe without any loss of liquid or gas.

1033.—Henry Davey, of 9, Victoria Chambers, in the city of Westminster, engineer, for "*Improvements in steam-engines, part of which is applicable to steam-pumps.*" Provisional protection only obtained. Dated March 26, 1868.

This invention consists, first, in an improved means by which the admission and emission valves of steam-engines are actuated, so that the governor is made to vary the point in the stroke of the engine at which the supply steam is cut off with the varying resistance or work which the engine has to overcome, or, as it is termed, variable expansion produced by means of the governor. Secondly, in an improved means by which the piston of direct-acting steam-engines is controlled, so that the engine works smoothly, and is peculiarly applicable to steam-pumps or pumping-engines; and, thirdly, in means by which the steam-valves of such engines are actuated. In carrying out the latter object, the pistons of direct-acting engines are made to actuate the valves which give admission and emission to the steam.

1058.—James Grafton Jones, of the Blaina Iron-Works, near Newport, in the co. of Monmouth, for "*Improvements in apparatus for hauling minerals in mines, and for raising water from mines and other places.*" Patent dated March 27, 1868.

This invention is not described apart from the drawings.

APPLICATIONS FOR LETTERS PATENT.

3694.—Matthew Piers Watt Boulton, of Tew Park, in the co. of Oxford, gentleman, and John Imray, of Westminster Bridge Road, in the co. of Surrey, engineer, for "*Improvements in rotary propellers, pumps, and fans.*" Dec. 4, 1868.

3697.—Frederick Beech, of Salford, in the co. of Lancaster, estate agent, for "*Improvements in gullies or stench-traps, and in mud-boxes connected therewith.*" Dec. 4, 1868.

3714.—Alexander Melville Clark, of 53, Chancery Lane, in the co. of Middlesex, patent agent, for "*A new or improved chemical compound for the disinfection and treatment of sewage and other liquid and solid matters.*" A communication. Dec. 5, 1868.

3715.—Aristide Balthazard Bérard, of Avenue Montaigne, Paris, in the empire of France, civil engineer, for "*Improvements in the processes and apparatus for manufacturing, collecting, and purifying gas for heating and other purposes.*" (Complete specification.) Dec. 7, 1868.

3724.—Claude François Constant Cretin and James Watson, both of Glasgow, in the co. of Lanark, N.B., for "*Improvements in supplying air to divers, and lamps for burning gases and oils.*" Dec. 7, 1868.

3764.—John Flowers Bentley, of Peterborough, in the co. of Northampton, for "*Improvements in wells or apparatus for obtaining and supplying water, and in the mode of sinking or forming the same; applicable also to sinking cylinders or caissons for other purposes.*" Dec. 10, 1868.

3773.—Edward Hodson Bayley, of 42, Newington Causeway, in the borough of Southwark, in the co. of Surrey, wheelwright, for "*Improvements in filter vans and carts, and in apparatus connected therewith, some of the said improvements being applicable to filters in general.*" Dec. 12, 1868.

3777.—Henry Law, of 15, Essex Street, Strand, in the co. of Middlesex, civil engineer, for "*Improvements in water-closets.*" Dec. 12, 1868.

3806.—Alexander Baumann, of Heilbroun, Wurtemberg, but now residing in Cecil Street, in the co. of Middlesex, for "*Improvements in pressure-governed slide-valves.*" Dec. 15, 1868.

3812.—Miles Lockhart, of Douglas, in the Isle of Man, for "*Improved means or apparatus for ventilating, chiefly applicable to chimneys.*" Dec. 15, 1868.

3816.—Thomas Wilson, of Birmingham, in the co. of Warwick, gun manufacturer, for "*Improvements in couplings for connecting tubes for signalling on railway trains, and for other purposes.*" Dec. 15, 1868.

3843.—George Henry Benson, of Staleybridge, in the co. of Chester, engineer, and William George Valentin, of the Royal College of Chemistry, chemist, for "*Improvements in the generation or production of combustible gases, and in the apparatus employed therein.*" Dec. 17, 1868.

GRANTS OF PROVISIONAL PROTECTION.

3273.—William Edward Gedge, of the firm of John Gedge and Son, of 11, Wellington Street, Strand, in the co. of Middlesex, patent agent, for "*An improved gas-burner.*" A communication. Oct. 26, 1868.

3477.—Henry Carter, of Manchester, in the co. of Lancaster, for "*An improved apparatus to be employed for exhibition purposes in connexion with gas-burners.*" Nov. 16, 1868.

3522.—Edward Hodson Bayley, of 42, Newington Causeway, in the borough of Southwark, in the co. of Surrey, wheelwright, for "*Improvements in carts or other vehicles for the removal of snow from streets, roads, and other places, and in apparatus connected therewith for melting the said snow and disposing of the water thus produced, the said carts being able to be applied, if required, to other useful purposes.*" Nov. 20, 1868.

3562.—Thomas Smith, M.D., of Portland House, Cheltenham, and John Van Norden Bazalgette, of the Langham Hotel, Portland Place, in the co. of Middlesex, for "*Improvements in deodorizing and manufacturing manures from sewage and other foul waters, and in apparatus employed therein.*" Nov. 23, 1868.

3568.—William George Beattie, of South Bank, Surbiton, in the co. of Surrey, engineer, for "*Improvements in slide-valves.*" Nov. 24, 1868.

3581.—George Bernhardt, of the firm of John C. Milns and Co., Radcliffe, in the co. of Lancaster, spinners and manufacturers, for "*Improvements in arrangements and apparatus for regulating and economizing the supply of gas in mills and manufactories.*" Nov. 25, 1868.

3599.—Louis Roman, of Paris, France, hydraulic engineer, for "*An hydraulic motive power.*" Nov. 26, 1868.

3635.—William Naylor, of Mildmay Park, in the co. of Middlesex, engineer, for "*Improvements in railway breaks and in apparatus connected therewith, part of which improvements is applicable to the regulating the pressure of steam, air, gas, or water for various useful purposes.*" Nov. 28, 1868.

3694.—Matthew Piers Watt Boulton, of Tew Park, in the co. of Oxford, gentleman, and John Imray, of Westminster Bridge Road, in the co. of Surrey, engineer, for "*Improvements in rotary propellers, pumps, and fans.*" Dec. 4, 1868.

3697.—Frederick Beech, of Salford, in the co. of Lancaster, estate agent, for "*Improvements in gullies or stench-traps, and in mud-boxes connected therewith.*" Dec. 4, 1868.

3714.—Alexander Melville Clark, of 53, Chancery Lane, in the co. of Middlesex, patent agent, for "*A new or improved chemical compound for the disinfection and treatment of sewage and other liquid and solid matters.*" A communication. Dec. 5, 1868.

NOTICES TO PROCEED.

2328.—George Smith, of Camberwell New Road, in the co. of Surrey, civil engineer, for "*Improvements in machinery for obtaining rotary motion, and for raising, forcing, and measuring fluids.*" July 24, 1868.

2349.—James Allison Hogg, the younger, of the city of Edinburgh, in Scotland, gas engineer, for "*An improved lamp.*" July 27, 1868.

2364.—James Webster, of Birmingham, in the co. of Warwick, engineer, for "*Improvements in the manufacture of gas and vapour, and in applying such gas and vapour in manufacturing and refining iron and other metals, and in recovering certain products therefrom.*" July 28, 1868.

2426.—Charles Geoghegan, of the city of Dublin, for "*Improvements in self-acting regulators, and in the cocks or taps to the same for supplying fluids at high pressure and preventing the bursting of cocks, pipes, or taps under ordinary circumstances, or from the effects of frost.*" Aug. 1, 1868.

2457.—Edmund Edwards, of 22, Buckingham Street, Adelphi, in the city of Westminster, civil engineer, for "*Improvements in pumps.*" Aug. 6, 1868.

2496.—Walter Watson Hughes, of 48, Porchester Terrace, in the co. of Middlesex, for "*Improvements in fans or apparatus for forcing or drawing air.*" Aug. 10, 1868.

2512.—John Winsborrow, of 10, Livermere Place, Livermere Road, Dalston, in the co. of Middlesex, for "*Improvements in apparatus for measuring water and other liquids, which improvements are also applicable in obtaining motive power.*" Aug. 12, 1868.

3151.—William Robert Lake, of 8, Southampton Buildings, Chancery Lane, in the co. of Middlesex, consulting engineer, for "*Improvements in apparatus for generating and burning the vapour of hydrocarbon liquids.*" A communication. Oct. 14, 1868.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

3089.—William Johnston, "*Improvements in lamps, lanterns, and gas-fittings.*" Dec. 2, 1865.

3099.—Thomas Bell, "*Improvements in treating the oxide of iron residues of gas purifying, in order principally to extract sulphur therefrom.*" Dec. 2, 1865.

3214.—Alfred Vincent Newton, "*An improved construction of tool for cutting tubes.*" Dec. 12, 1865.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £100 BEFORE THE EXPIRATION OF THE SEVENTH YEAR.

3048.—John Knowelden, "*Improvements in pumps.*" Dec. 5, 1861.

3108.—William Henry Tooth and William Yates, the younger, "*Improvements in the manufacture of iron and steel, and in the machinery, apparatus, or furnaces used therein, and for the production of gas to be employed in such manufacture.*" Dec. 11, 1861.

Legal Intelligence.

CLERKENWELL POLICE COURT.—Saturday, Dec. 12.

(*Before Mr.* Cooke.)

FOWLER *v.* THE CHARTERED GAS COMPANY.

The plaintiff in this case was a beer-house keeper, residing at 117, Central Street, St. Luke's, and the complaint was that the gas company, after having taken and accepted the security agreed upon between them and the plaintiff for gas to be supplied to him, had failed to continue such supply, contrary to the provisions of the Metropolis Gas Act, 1860.

Mr. Wright, instructed by Mr. Hope, solicitor, appeared for the plaintiff, and Mr. Montagu Williams, instructed by Messrs. Humphreys and Morgan, appeared for the defendants.

The short facts of the case, as proved in evidence, were these:—Mr. Fowler, having spent about £150 in fitting up the above beer-house, asked the defendants to put on the gas. This they refused to do without security, and about the 12th of September the plaintiff, accompanied by Mr. Hope, jun., went to the office of the company and induced them to accept a promissory note for £5, payable on demand, as security. On the 13th of November two men called on the plaintiff, said they had come from the gas company, and asked if he was prepared to pay the £5. He said he should have been had notice been given him; and then he was told that if he did not pay the amount at once the gas would be cut off. As he was not prepared to comply with that demand, the men went downstairs and cut off the gas, and it has been cut off ever since.

Mr. Cooke, in giving judgment, said: This is a summons taken out by George Fowler against the Chartered Gas Company, by which he complains that the company has wilfully failed to continue to supply gas to his premises, contrary to the provisions of the Metropolis Gas Act, 1860. The facts, as proved before me, are shortly these: Mr. Fowler requiring to be supplied with gas, applied to the company for such supply, and they desiring security, which under section 15 they had a right to require, consented to receive from him his promissory note for £5, payable on demand. The company alleged that this note was to be paid within one month. Mr. Fowler, on the other hand, alleged that no express agreement was made as to the month. With this verbal contradictory evidence as to the time, I may at once say that I shall consider the note speaks for itself, and that no stipulation that it was to be paid in a month is proved. It further appears that, on a request by one of the company's officers that the note should be converted into money, Mr. Fowler asked for some delay, but immediately, and without notice, the company cut off the supply of gas, the result being great inconvenience and injury to Mr. Fowler in his business. It was admitted that no rent for gas was due from Mr. Fowler to the company. It was contended, on behalf of the company, that the promissory note was in fact dishonoured, and that Mr. Fowler was in the position of not having given or having ceased to give security to the company, without which they were not bound to supply gas to him; and, secondly, that section 17 did not apply to a case where the complaint was the non-continuance of the supply of gas. Mr. Fowler contended that the security was still existing, and that the company should have given notice of their intention to discontinue the supply of gas, and that the 17th section applied to the present case. The 23 & 24 Vict., cap. 125 (the Metropolis Gas Act), incorporates the Gas-Works Clauses Act, 10 & 11 Vict., cap. 15. The 14th section provides for the gas company supplying pipes and gas; the 15th section makes provision that the owner or occupier, if so required in writing by the gas company, shall give security for the payment of the future supply of gas and a reference to a magistrate in cases of disagreement. It may be observed that in all cases the security is not required, and in practice it is seldom so. In the present case I am of opinion that the company, having accepted the promissory note, was bound by it, with all its consequences, until it was given up, or notice was given that they held that security to be invalid, in which case the company might in writing require Mr. Fowler to give proper security, and he, in case of a difference arising as to the security itself, might refer the matter to the decision of a magistrate. I think the whole tenour of the Metropolis Gas Act, and the Gas-Works Clauses Act incorporated in it, contemplated and required notice to be given by the company to the consumer before they discontinued the supply of gas when once supplied, the 16th and 17th sections of the incorporated Act providing for the cutting off the service-pipes and gas if the rent due for the same was in arrear, the company giving the consumer 24 hours notice of their intention of entering the premises for the purpose of carrying away the pipes. The 21st section of the Metropolis Gas Act is very clear as to the intention of the Legislature, that when the gas is once supplied it shall only be discontinued after notice to the consumer, by providing that "no contract between the company and the consumer shall contain any term or condition which shall entitle the company to discontinue any supply of gas by less than one month's notice in writing to the consumer unless the rate due for gas shall be in arrear, in which case three days notice in writing to the consumer shall be sufficient." The whole tenour of the Act clearly contemplates such notice to be given, and the inconvenience of any other arrangement was forcibly pointed out by the counsel for Mr. Fowler, in the case of an immediate discontinuance of the gas from a crowded public building without notice. Upon the second question, default having been made by the company, whether the 17th section supplies a remedy, I am of opinion that it does. The 17th section provides that, should the company, where the security agreed on by the parties or determined by the magistrates is given, wilfully fail for 14 days thereafter to provide and lay all proper and sufficient communication, service, and other pipes, or to furnish a supply of gas, then and in every such case the gas company shall, on a summary conviction, forfeit and pay to the consumer a certain penalty. It is clear to me that these are not limited simply to the laying on the pipes and supplying the gas in the first instance, but must in common sense be taken to mean the continuous supply of the gas. If it were otherwise the company might, having fulfilled the condition, immediately disconnect the pipes, and leave the consumer without means of redress. I think, therefore, the security accepted by the company was existing, and that they have improperly discontinued the supply of gas from Mr. Fowler's premises. Without doubt great inconvenience arose to Mr. Fowler, and I fine the gas company 10s. per day from the day of the gas being discontinued to the day of the summons.

Mr. Hope asked the magistrate to grant costs; his client had been put to great expense.

Mr. Cooke said he should allow £2 4s. as costs.

Mr. Montagu Williams asked that a case might be granted as to the construction of the 17th section of the Metropolis Gas Act.

Mr. Cooke said he would do so, but he should hold as a fact that the security was an existing security at the time.

Mr. Williams said he would consider the matter, and the parties then left the court.

Miscellaneous News.

THE PARÀ GAS COMPANY, LIMITED.

The Sixth Ordinary General Meeting of the Shareholders of this Company was held at the Offices, No. 3, Victoria Street, Westminster, on Saturday, the 19th inst. The chair was taken at twelve o'clock by Sir WM. CLAY, Bart.

The SECRETARY (Mr. Arthur C. Blunt) read the notice convening the meeting, and the following report of the directors to the shareholders:—

The directors have the pleasure of submitting to the proprietors the following report, giving an account of the operations of the company since the last meeting of the shareholders; and it is gratifying to them to be enabled to state that, in their opinion, the condition and prospects of the company manifest a sound and progressive prosperity.

Several important matters have been carried out since the last report, and among them the placing of 97 additional street-lamps which his Excellency the President sanctioned last year, and which has involved the laying of 4593 yards of new main to supply them; but, with respect to these new lamps, only a small proportion of the annual rental appears in the present accounts.

The purchase of a piece of ground fronting the works, which would otherwise have been sold to other parties, has been completed; it has now been acquired at a price which, taking the fall of exchange into consideration, is considerably below what was originally asked for it.

The two iron lighters have also arrived at Parà; one has been put together and is at work, and the other very nearly completed.

There have also been additions made to the buildings, in order to provide accommodation for the apprentices sent out, and for some additional tramways required in the yard.

The number of gas consumers supplied by the company has considerably increased, and would have been much further augmented but for the non-revival of trade arising from the continuance of the war in Paraguay; this has also retarded the extension of business which was expected from the opening of the great river Amazon to the commerce of all nations.

Upon a comparison of the receipts and expenditure of the company for the half year ending the 30th of September, 1868, your directors recommend a dividend for the present half year at the rate of 7½ per cent. per annum, free of income-tax.

The directors cannot doubt that this result will be deemed highly satisfactory, considering the existing circumstances in Brazil.

For the current year your directors think a yet more favourable result may fairly be expected, both from the extension of gas lighting and also from a general advance in the prosperity of Parà, which the close of the Paraguayan war, now evidently near at hand, must produce.

The works and plant are in a state of efficiency, and on this head the manager reports as follows:—"As I consider that one of the principal parts of my duty is to maintain the works in an efficient condition, I beg to assure you that nothing in this respect is neglected, and that the officers under me are regular in their attendance at business, efficient, and, I consider, trustworthy. The two apprentices lately sent out are well behaved and intelligent."

The directors have, since the last general meeting, in pursuance of the powers conferred on them by the Articles of Association, elected Frederick Wigan, Esq., to a seat at the board, to supply the vacancy occasioned by the retirement of Charles Aird, Esq.

Two of your directors, namely, Henry Whiting, Esq., and Arthur T. F. Clay, Esq., retire from office, but are eligible for re-election, and offer themselves accordingly.

Mr. Ernest Oswald Coe and Mr. Joseph Quick, jun., the auditors of the company retire from office, but are eligible for re-election, and offer themselves accordingly.

The following are the accounts submitted to the meeting:—

Dr. *Balance-Sheet, Sept.* 30, 1868. *Cr.*

To Share instalments—				By Works, including gas-fittings—			
Received to Sept. 30, 1867 . .	£120,632	0	0	Expended to Sept. 30, 1867 . .	£117,619	8	8
Received to Sept. 30, 1868. . .	3,198	0	0	Expended this year to Sept. 30, 1868. . .	5,195	18	2
	£123,830	0	0		£122,815	6	10
Loans . . .	7,053	12	9	Coals	6,652	12	3
Profit and loss .	4,878	4	3	Public lights and residual products	2,601	9	10
				Remittance account . . .	305	15	4
				Petty cash—			
				At Parà . £70 15 3			
				Due to secretary . 18 14 4			
					52	0	11
				Messrs. Glyn & Co.—balance in their hands	1,251	1	11
				Messrs. Mauá & Co.—balance in their hands	2,083	9	11
	£135,761	17	0		£135,761	17	0

Dr. *Revenue Account for the Year ending Sept.* 30, 1868. *Cr.*

To Wages, including lamp-lighting and purification	£2,585	14	7	By Balance brought forward	£4,103	0	3
Coals and wood for carbonizing.	6,350	15	3	Public lights . . .	10,490	15	7
Directors attendance & salaries to officers .	2,936	0	0	Private lights . . .	5,603	16	11
Retorts	192	16	5	Meter, &c., rental . .	663	19	3
Rent and taxes . . .	194	4	9	Public establishments.	346	11	9
Printing, stationery, & various charges . .	325	13	9	Bricks	46	2	11
Repairs	314	11	10	Illuminations . . .	578	8	2
Interests	246	8	6	Tar	199	10	7
Tools	12	18	9	Coke	1,540	17	1
Dividends	6,636	14	3	Lime	21	18	0
Balance carried forward	4,878	4	3	Exchange	473	0	3
				Lamps	7	19	9
				Gas-fitting department	598	1	10
	£24,674	2	4		£24,674	2	4

Captain J. CLARKE moved that the report be approved and adopted.

FREDERICK WIGAN, Esq., seconded the motion.

The CHAIRMAN said: Gentlemen, you have heard the resolution which has been moved and seconded, and really there is very little to be added to the report which has been read, and which, in my opinion, must be considered to be in the very highest degree satisfactory, considering the circumstances of the last year in Brazil. There are two or three things noticeable in this report to which I will just call your attention. In the first place, the profit on the gas-fitting account is really written off as profit, £598; but there has previously been written off against it a depreciation of £643, and the total depreciation now written off upon our works amounts to £1437 2s. 7d., upon which Mr. Wilson himself observes that that may, perhaps, be considered too large, and my own feeling and that of my colleagues is that it is perhaps an exaggerated amount to write off as depreciation. At all events, it is a fault on the right side, and it is very gratifying to us to know that that which is claimed as profit is based upon so sure a foundation. Well, another important point is, that in this year, through the admirable management of our resident manager, and I am bound also to add the good faith of the Government, we have no loss on exchange; on the contrary, certain sums which have been paid by the Government and brought in leave an apparent profit—that is to say, an apparent profit, inasmuch as it is the recouping of the loss—an apparent profit of some hundreds of pounds upon the account. Again, gentlemen, some of the columns of the lamps have been repaired, the money and the money laid out in improvements, which properly ought to be charged to capital, is charged in this account as outlay. Well, then, I have to tell you that new lights have been ordered. There has been an increase of 129—that is to say, in this last September the number was 1255, as against 1126 at the same time last year. The private lights in September last year were 4001; they are now, or rather were at the end of last September, 4697, being an increase of 696. The number of meters in September, 1867, was 728; they are now 861, being an increase of 133. Now, gentlemen, all this has occurred in a year in which there have been not only no circumstances calculated to produce extra income, but in which there has been much to depress the sources from which our revenue is derived. In the first place, there has been a much smaller amount sold of residual products, but with regard to all those particulars Mr. Wilson entertains the fullest opinion that these sources of income will revive in the course of the current year. There will also be an increase in the public establishments, and, as we believe, an increase also of private consumers. Therefore, upon those heads in the current year we expect an increase of income, and I think we may fairly assume that the prosperity of the year which has just expired, derived under circumstances of considerable difficulty, may be expected to increase in the current year. Gentlemen, I do not know that it is necessary for me to say more than these very few words, just pointing out to you what is really apparent on the accounts which you have before you, and just pointing out that the way in which we make out those accounts is perfectly sound. An ample amount has been allowed for depreciation, and we think, therefore, that the statements of the income and expenditure of this year are thoroughly to be relied upon. We also think, upon our own view of the circumstances (and it is also in Mr. Wilson's opinion), that the income of the current year—that is to say, the revenue as compared with the expenditure—will present even a much more favourable aspect than it seems to do.

The motion for the adoption of the report was carried unanimously.

Captain J. CLARKE: I have now the pleasure of moving the following resolution:—"That the interim dividend paid to the shareholders, at the rate of 5 per cent. per annum, for the half year ending the 30th of June last, be and is hereby confirmed; and that a half year's dividend, free of income-tax, up to the 31st inst., at the rate of 7½ per cent. per annum, be payable to the shareholders on and after the 25th of January next."

The motion having been seconded, was agreed to.

Mr. VIALLS proposed that Henry Whiting, Esq., one of the directors retiring by rotation, in accordance with the Articles of Association, be re-elected.

Mr. BOWDWIN seconded the proposition, which was carried.

Arthur T. F. Clay, Esq., was also re-elected a director.

Mr. Ernest Oswald Coe, and Mr. Joseph Quick, jun., were re-elected auditors of the company.

The SECRETARY then read a notice convening an extraordinary general meeting, for the purpose of obtaining the sanction of the shareholders to an increase of the capital of the company.

The CHAIRMAN said: Gentlemen, this court is now constituted a special court, for the purpose of considering the propriety and convenience of adding to the capital of the company. Now I may mention on that subject that from the prosperous comdition of the company there have occurred necessities for the augmentation of capital, and, in fact, many of our sources of income depend upon our having laid out that capital; for instance, in our iron holders, and the various extensions of our premises, we have laid out considerable sums. Up to January, 1865, there had been paid to the contractor £91,206, and there has been expended since then on extension of works up to January, 1868, £31,609. The truth is, we never had quite capital enough, and we have laid out money as capital which really properly belonged to revenue. We have laid it out very wisely and prudently in creating the fresh works. But it is quite clear now that it will be desirable to have more capital to be called up if wanted. We now, therefore, propose that the nominal capital of the company be increased from £125,000 to £150,000, by the creation and issue of 2500 new shares of £10 each, to be offered by the directors to the members. Now, gentlemen, it seems to me that it would be bad for us to get the capital we want in any way more onerous than in subscribing it among ourselves who know the circumstances best. I myself, with the other directors, am quite willing to take the new shares. You yourselves are judges whether the concern is not upon the whole eminently prosperous. I think there has never been any concern of the kind more so, or that promised better for the future. It is quite clear it would be unwise to be hampered with small sums of money (the amount required is not large certainly), so as to either limit our profits or make a heavy charge upon our income. That the concern will go on to prosper largely I think there can be no doubt. I do not like to anticipate, but I think the time is not very remote when we shall pay 10 per cent; and, in saying this, I must add that a great part of the prosperity of the company depends upon the admirable management of our resident director and manager there, Mr. Wilson. Nothing can exceed the good sense and judgment and energy with which he has conducted the affairs of the company through periods of difficulty. There cannot be a better proof of this than the way in which he has arranged with the Government for recouping us upon the loss on the exchange. We owe a great deal to him, and it is with very great pleasure that I find in the report a statement of his own health, and also of his confident anticipations as to the prosperity of the company.

A. T. F. CLAY, Esq., moved the following resolution:—"That the nominal capital of the company be increased from £125,000 to £150,000, by the creation and issue of 2500 new shares of £10 each, to be offered by the directors to the members registered on this day in proportion to the number of their respective shares; and that so many of the new shares as are not taken by the shareholders within a time to be limited by the directors for that purpose, be allotted or disposed of in such manner and at such time or times as the directors think fit; that the sum of £2 shall be payable upon each share on allotment, and that calls may be made by the directors at such times and in such amounts as they shall think fit, provided that calls be not made at intervals of less than three months, and that no call exceed £2 per share; that the proprietors of the new shares shall be at liberty to pay in advance of calls, and shall receive upon the amounts which may from time to time be paid upon their shares the same dividend as is paid upon the remaining capital of the company."

Mr. WHITING seconded the motion, which was carried *nem. con.*

Mr. VIALLS proposed a vote of thanks to the chairman and directors, which being warmly accorded,

The CHAIRMAN said: I thank you, gentlemen, on behalf of my colleagues and myself, and can only say that we derive our powers to be useful from the confidence which you place in us. We thank you for that confidence in the past, and hope for a continuance of it in the future.

DR. FRANKLAND'S ANALYSIS OF THE METROPOLITAN WATERS IN NOVEMBER, 1868.—"Royal College of Chemistry, Nov. 28, 1868.—Sir,—I have the honour to submit to you in the following table the results of the chemical examination of the waters supplied to the metropolis during the month of November. For the purpose of comparison I append also the results yielded by the waters supplied to the towns of Edinburgh, Glasgow, Newcastle, Manchester, and Preston, when submitted to the same analytical processes. The Southwark Company's water, which was exceptionally contaminated during the months of August, September, and October, has now returned to its normal condition. It does not now differ in any marked degree from the water of the other companies drawing their supplies from the Thames.

Companies.	Date and Place of Collection.	Temperature in Centigrade Degrees.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.	Ammonia.	Nitrogen, as Nitrates and Nitrites.	Total combined Nitrogen.	Previous Sewage Contamination (Estimated).	Chlorine.	Total Hardness.
Thames.											
Chelsea.....	Nov.18—Cab Rank, Horse Guards ..	7·7	31·22	·164	·022	·000	·216	·238	1840	1·688	23·9
West Middlesex	Nov.20—Cab Rank, Portland Road ..	7·7	30·18	·144	·017	·000	·177	·194	1450	1·737	24·5
Southwark & Vauxhall..	Nov.18—Cb. Rk. St. George's Ch., Bo.	8·3	30·76	·157	·025	·001	·260	·286	2290	1·688	24·3
Grand Junction.....	Nov.20—Cab Rank, Woodstock St. ..	7·2	31·16	·140	·000	·000	·297	·000	2650	1·737	24·8
Lambeth....	Nov.18—CabRank, Lambeth Road..	7·2	31·74	·168	·027	·001	·277	·305	2458	1·787	24·5
Other Sources											
New River...	Nov.20—Cab Rank, Tottenham Ct. Rd.	7·2	29·72	·044	·009	·000	·184	·193	1520	1·489	23·0
East London.	Nov. 20 — Slater's, Old Ford Road .	8·3	31·72	·094	·021	·001	·213	·235	1829	1·886	23·8
Kent.....	Nov. 18 — Deptford Bdge. Police Stat.	10·5	42·02	·042	·026	·000	·396	·422	3640	2·283	31·3
Edinburgh Waters.											
Crawley Burn	Sept., 1868.		11·28	·187	·031	·001	·000	·032	0	1·042	6·1
Coniston Wr.			22·58	·085	·017	·001	·744	·762	7124	1·886	10·4
Swanston Wr.			12·70	·378	·059	·001	·000	·060	0	1·390	6·2
Colmton Wr.			14·10	·208	·042	·000	·000	·042	0	0·894	9·2
Newcastle...	September		23·40	·237	·062	·000	·000	·062	0	1·588	13·9
Loch Katrine	July, Glasgow....		3·0	·161	·011	·001	·000	·012	0		0·3
Manchester..	June—Manchester		6·2	·183	·009	·006	·025	·039	0	1·117	3·7
Preston	August—Preston .		12·44	·236	·031	·006	·000	·036	0	1·590	8·9
Column 1	2	3	4	5	6	7	8	9	10	11	12

The numbers in columns 4, 5, 6, 7, 8, 9, 10, 11, and 12 all relate to 100,000 parts of the waters. The table is to be read thus: The Chelsea Company's water collected on Nov. 18, at the Horse Guards cab rank, had a temperature of 7·7° Cent.; 100,000 lbs. of it contained 31·22 lbs. of solid impurity; the organic matter, constituting a portion of this impurity, contained ·164 lb. of carbon and ·022 lb. of nitrogen. This solid impurity also contained ·216 lb. of nitrogen in the form of nitrates and nitrites, whilst the total amount of *combined* nitrogen in every form was ·238 lb. The above quantity of water supplied by the Chelsea Company had been, after its descent to the earth as rain, contaminated with sewage or manure matter equivalent to 1840 lbs. of average filtered London sewage. By gradual oxidation, partly in the pores of the soil, partly in the Thames and its tributaries, and partly in the reservoirs, filters, and conduits of the company, this sewage contamination had been converted into innocuous inorganic compounds before its delivery to consumers. Finally, 100,000 lbs. of the Chelsea Company's water contained 23·9 lbs. of carbonate of lime, or an equivalent quantity of other soap-destroying ingredients.—I have, &c., E. FRANKLAND.—The Registrar-General, &c."

COSTS OF OBTAINING THE DUNDEE GAS ACT, 1868.—At a meeting of the Dundee Gas Commissioners, held on the 2nd inst., the clerk read a statement of accounts claimed against the Dundee Gas Commissioners by the town of Dundee and the gas companies for law expenses:—

I. SESSION 1867—			
1. Mr. Kerr's account for opposition to the gas companies bills	£516 10 11		
2. Mr. Robertson's account for ditto	455 12 1		
		£972	3 0
II. GAS BILL, 1868—			
1. Mr. Kerr's account	£1436 3 11		
2. Mr. Robertson's ditto	1974 5 10		
3. Shiell and Small's ditto	486 11 1½		
4. J. W. Thomson and Son's ditto	312 6 0		
5. Loch and M'Laurin's ditto	241 15 2		
6. Graham and Wardlaw's ditto	238 8 5		
7. Gas Directors	224 0 0		
		4913	10 5½
III. BILL No. 2, 1868—			
1. Mr. Kerr's account	101 1 2		
2. Mr. Robertson's ditto	188 19 0		
3. Messrs. Loch and M'Laurin's	20 16 4		
4. Graham and Wardlaw's	30 4 6		
		341	1 0
		£6226	14 5½
TO WHICH ADD—			
Accounts for witnesses, &c., already paid by the commissioners to the Town Council	£2650 17 7		
Less—			
What is included in the above sum as paid to Mr. Kerr and Mr. Robertson, being	1365 0 0		
		1285	17 7
Amounts paid directly to witnesses, or still to be paid to them		362	18 8
		£7875	10 8½

The expenses of the Chamber of Commerce in opposing the bill are not included in the above account.

THE EASTBOURNE GAS COMPANY.—The new works of this company were formally opened on Saturday, the 5th of December. These works, which were commenced in May last, are now completed and in full operation. The coals are brought on to the works by a railway siding, and unloaded from the railway trucks into smaller trucks, which are then raised by a hydraulic lift, and conveyed on an elevated tramway into every part of the coal-stores, which are situated on each side of the retort-house. The retort-house is built for 84 clay retorts, each 10 feet long. The works are also provided with an annular condenser; two engines, which work the two exhausters as well as the water, tar, and liquor pumps and the hydraulic lift; a scrubber, 10 feet diameter by 20 feet high; two purifiers, 12 feet square by 5 feet deep (the two purifiers from the old works will be used in addition to these); a brick gasholder-tank, containing a holder 100 feet diameter by 24 feet deep; a station-meter; a governor; tar and water tanks, &c.; and a manager's house and offices. The works were constructed from the designs and under the superintendence of Mr. Alfred Williams, of 64, Bankside, London, the company's engineer.

Share List of Metropolitan Gas Companies.

Number of Shares issued.	Amount per Share.	Name of Company.	Amount paid up p. Share.	Dividend p. Cent. p. Annum.	Price per Share.
	£		£ s. d.	£ s. d.	£
8000	10	Anglo-Romano	10 0 0	10 0 0	11 — 12
5000	20	Bahia (Limited)	20 0 0	3 0 0	14 — 15
1000	20	Do., preference	20 0 0	10 0 0	20 — 22
750	20	Do., do., redeemable	20 0 0	10 0 0	20 — 21
40000	5	Bombay (Limited)	5 0 0	4 10 0	3⅞ — 4
10000	5	Do., third issue	4 0 0	4 10 0	2¾ — 3
10000	20	British (Limited) (Norwich, Hull-Sculcoates, Hanley, Tunstall & Shelton [Potteries], Trowbridge, & Holywell.)	20 0 0	10 0 0	29½ — 30½
12000	50	*Chartered*	50 0 0	7 0 0	55 — 56
6000	50	Do.	45 0 0	7 0 0	49 — 50
10000	20	*City of London*, A shares	20 0 0	9 0 0	25 — 26
10000	10	Do., B shares	10 0 0	4 0 0	6 — 7
9639	10	Do., new shares	10 0 0	9 0 0	12 — 13
25000	25	City of Moscow (Limited)	25 0 0	nil.	2 — 3
17490	25	*Commercial*	25 0 0	10 0 0	36 — 37
20000	20	Continental Union	20 0 0	4 0 0	17½ — 18
10000	20	Do., preference	20 0 0	7 0 0	20 — 20½
5000	10	*Crystal Palace District*	10 0 0	10 0 0	14 — 15
5000	10	Do., preference	10 0 0	6 0 0	12½ — 13
10000	10	Do., new shares	2 10 0	7 0 0	2½ — 3
4000	50	*Equitable*	50 0 0	10 0 0	67 — 68
4000	25	Do., new shares	25 0 0	10 0 0	33½ — 34½
23406	10	European (Limited)	10 0 0	11 0 0	15 — 15½
12000	10	Do., new shares (Boulogne, Amiens, Rouen, Caen, Havre, & Nantes.)	5 0 0	11 0 0	7½ — 7¾
20000	10	*Great Central Gas Consumers*	10 0 0	10 0 0	14½ — 15
5000	10	Hong Kong (Limited)	10 0 0	6 0 0	8 — 10
26000	50	*Imperial*	50 0 0	10 0 0	68 — 69
26000	10	Do., new shares	3 0 0	10 0 0	4¼ — 4½
26000	10	Do., new shares	3 0 0	7 0 0	3½ — 3⅝
1300	100	Do., bonds	£100	10 0 0	175 — 180
28000	50	*Imperial Continental* (Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam, Aix-la-Chapelle, Antwerp, Bordeaux, Brussels, Cologne, Frankfort-on-Maine, Haarlem, Stolberg, Toulouse, & Vienna.)	43 15 0	16 0 0	95½ — 96
400	100	Imperial Mexican (Limited)	100 0 0	nil.	
200	100	Do., new	100 0 0	nil.	
3000	40	*Independent*	40 0 0	10 0 0	52 — 53
3000	10	Do.	10 0 0	5 0 0	7 — 9
3000	20	Do.	12 10 0	7 10 0	13 — 14
7133	50	*London*	50 0 0	10 0 0	66½ — 67
5610	25	Do., 1st preference	25 0 0	6 0 0	26 — 28
503	50	Do., 2nd preference	50 0 0	6 0 0	
214	50	Do., 3rd preference	50 0 0	6 0 0	
£18781		Do., 1st preference stock		6 0 0	
£11828		Do., 2nd preference stock		5 0 0	
12000	5	Malta and Mediterranean (Limited)	5 0 0	5 0 0	3½ — 4
6000	5	Do., preference	5 0 0	7 0 0	.. — 5
30000	5	Oriental (Calcutta)	5 0 0	10 0 0	7¼ — 7⅝
30000	5	Do., new shares	1 0 0	10 0 0	1¼ — 1⅜
10000	5	Ottoman (Limited)	5 0 0	nil.	1¼ — 2½
12500	10	Pará (Limited)	10 0 0	7 10 0	8½ — 9
27000	20	*Phœnix*	20 0 0	10 0 0	28 — 28½
3600	100	Do., new	35 0 0	7 10 0	37½ — 38
144000	8k.	Do.	100 0 0	5 0 0	75 — 77
5000	20	*Rateliff*	20 0 0	10 0 0	25 — 26
	20	Rio de Janeiro (Limited)	20 0 0	10 0 0	24 — 25
6959	5	Singapore (Limited)	5 0 0	4 0 0	
2000	5	Do., preference	5 0 0	7 10 0	
		Shanghai			
4500	50	*South Metropolitan*	50 0 0	10 0 0	73 — 75
	12½	Do., new shares	12 10 0	10 0 0	18 — 19
15000	10	*Surrey Consumers*	10 0 0	10 0 0	14½ — 14⅝
10000	10	Do., new	6 0 0	10 0 0	8 — 8½
9000	4	United General (Limerick)	4 0 0	5 0 0	2 — 2½
10000	10	*Victoria Docks*	5 0 0	6 0 0	
1500	10	*Wandsworth and Putney*	10 0 0	10 0 0	10 — 12
2989	10	Do.	10 0 0	7 10 0	10 — 10½
316	10	Do.	6 10 0	7 10 0	
1128	10	Do.	3 0 0	7 10 0	
20000	10	Western (Limited) A shares	10 0 0	10 0 0	14½ — 15
10000	10	Do., B shares	6 0 0	10 0 0	8 — 9
10000	10	Do., C shares	6 0 0	10 0 0	8 — 9
20000	10	Do., D shares	1 0 0	10 0 0	1½ — 2
8000	5	*West Ham*	5 0 0	7 10 0	.. — 7½
6000	5	Do., new shares	5 0 0	7 10 0	.. — 7½
551	10	West London Junction (Limited)	10 0 0	6 0 0	
529	10	Do., preference	10 0 0	6 0 0	

OBITUARY.—On the 17th of December, at 26, Southampton Street, Strand, deeply regretted, John Rigby Hinde, Esq., in the 73rd year of his age, for upwards of 30 years the secretary of the London Gaslight Company; and on the same day, at Bridge House, Nine Elms, D. Watson. Esq., aged 43, late engineer of the London Gaslight Company.

PHŒNIX GAS COMPANY.—At a special general meeting, held on Wednesday, Dec. 16, Mr. Edward Horner, for many years deputy-chairman of the company, was unanimously elected chairman, in the room of Mr. Johnson, deceased; and Mr. James Shand (Shand and Mason) was chosen to fill the deputy-chair. Mr. George D. Gibbes, of the Stock Exchange, takes a seat at the board.

INAUGURATION OF THE GAS-WORKS, BRANDON, SUFFOLK.—The opening of these works, which have just been completed by Messrs. Holmes and Co., of Huddersfield, under the superintendence of Mr. Wilton, was celebrated by a public dinner, attended by a number of the most influential inhabitants, who appear from their complimentary speeches to be highly gratified with the improvement thus afforded to the town.

WIDE ESTIMATING.—The Local Board of St. Mary Church, near Torquay, obtained an Act last session authorizing them to construct gas-works, and at a meeting held on the 4th inst. the following tenders were received for the erection of the new works:—

Mr. Willoughby	£4712
Mrs. Vickary	4009
Mr. Martin	3897
Mr. Wylie	3874
Messrs. Brown	2500

After some discussion, the tender of Messrs. Brown, of Lyme Regis, was accepted, subject to their sureties for the due performance of the work being satisfactory.

Price Current.

CASTINGS.—*Per Ton.*

Average Weight of Cast-iron Gas-pipes, per Yard.

1¼ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	32	51	70	89	107	126	149	177	208 lb

Retail Prices are 5 to 10 per cent. higher.	London.			Glasgow.			Newcastle and Middlesboro'.			Wales.			Yorkshire, Derbyshire, and Staffordshire.		
	£.	s.	d.	£	s	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Pig Iron, No. 1 (g.m.b.)	3	15	0	2	13	9	2	7	6	3	10	0	3	12	6
1¼ and 2-inch Socket-pipes	7	0	0	5	15	0	5	10	0	6	0	0	7	0	0
2½ and 3-inch ditto	6	10	0	5	5	0	5	0	0	5	15	0	6	10	0
4 and 5-inch ditto	6	0	0	4	15	0	4	10	0	5	5	0	6	0	0
6 inches and upwards ditto	5	15	0	4	5	0	4	0	0	5	0	0	5	15	0
Retorts, 1st fusion, hot blast	5	10	0	4	10	0	4	5	0	5	0	0	5	10	0
Ditto, 2nd ditto, cold ditto	6	10	0		—			—			—		6	10	0
Tank-plates, ¼ thick and above	6	0	0	5	0	0	4	15	0	5	10	0	6	0	0

WROUGHT-IRON TUBING,

Subject to 50 per cent. Discount.

	2 in.		1½ in.		1¼ in.		1 in.		¾ in.		½ in.	
Patent Welded Tubes, from 2 to 14 feet—per foot	s.	d.	s	d.	s.	d.	s.	d.	s.	d.	s.	d.
Ditto d tto, from 12 in. to 23½ in.—each	1	8	1	1	0	10	0	7	0	5	0	4½
Long Screws, from 12 in. upwards	3	0	2	0	1	6	1	1	0	9	0	8
Bends and Springs	4	0	2	3	2	0	1	6	1	2	0	11
Square Elbows, equal or reducing; Round Elbows, 5 per cent. extra	4	3	2	3	1	9	1	3	0	11	0	8
Tees, wrought or cast	3	9	2	3	1	9	1	3	0	10	0	8
Crosses, ditto, equal or reducing	4	0	2	6	2	0	1	6	1	1	0	9
Iron Cocks	4	9	3	6	3	0	2	3	1	9	1	6
Ditto, with brass plug	20	9	13	0	10	0	7	3	5	0	3	8
Diminishing Sockets, Caps, Plugs, and Nipples	28	0	16	0	13	0	7	0	5	6	4	6
Plain Sockets	1	3	0	9	0	8	0	6	0	5	0	4½
Syphons, 1-quart	1	0	0	8	0	7	0	5	0	4	0	3
	15	0	14	0	13	6	13	0	12	0	—	

GAS COALS.—*Per Ton.*

Newcastle.—Unscreened:—	
Haswells, Nettlesworth Primrose, and South Pelaw	8s. 6d.
Felling, Framwell Gate, North Pelton, Redhough Main, Walker's Primrose, West Wear, and Whitwell Primrose	8 9
Burnhope, Craghead, Chariaw, Derwent, East Castle, Edmondsley, Eighton Moor, Hartlepool Pelaw, Holmside, Lambton's Gas, Lanchester Pelaw, Medomsley, Mickley, New Pelaw, Pelaw Main, Ravensworth, Seaham, South Moor Pelton, South Leverson, Townley Main, Tyne Main, West Pelaw, Wearmouth Hutton, and Witton	7 0
Peareth, Ravensworth Pelaw, Waldridge, West Garesfield, and West Pelton	7 3
Brancepeth, Dean's Primrose, Londonderry Gas, New Pelton, Pelton, South Peareth, Stella, Urpeth, Washington Hutton, and West Leverson	7 6
Ramsay's Newcastle Cannel	15 0
Wigan Cannel (at Liverpool)	17 0
Scotch Cannel:—	
Boghead (at Leith)	42 6
Muirkirk	27 0
Kirkness, best (at Burntisland)	28 6
Japeidrae, 1st quality (at ditto)	28 6
Ditto, 2nd ditto (at ditto)	18 6
Dawdenheath	12 0
Lesmahago (at Glasgow)	31 6
Ditto (at Granton)	32 6
Arniston	27 6
Wemyss, f.o.b.	22 6
Haywood, Wilsontown (at Granton)	23 0
Pirnie, or Methill	17 0
Lothian's Cannel (f.o.b. at Leith)	26 0
Bo'ness Cannel (at Bo'ness)	19 0
Wylie' Cannel	23 6
Lochore Parrot (at Burntisland)	28 0
Lanemark (at Glasgow)	16 0
Elphinstone Tower (at Leith)	20 0
Coppa Cannel (on railsat Birkenhd.)	14 9
Ditto ditto (ditto at Connah's Quay)	14 3

FREIGHTS.

Coastwise—Newcastle.—Per Ton:—	
Chatham and Rochester	8s. 6d. to 7 6
Cork	8s. 6s. to 9 0
Dover, Folkestne, & Ramsgate	8s. 6d. 6 6
Dublin	9s. to 9 6
Exeter Quay	8s. 6d. to 9 0
Ipswich	4 6
London (from Leith)	8s. 6d. to 9 0
London (Pool)	8s. 1½d. to 6 3
Lowestoft and Yarmouth	5 0
Portsmouth & Southampton	6 9
Plymouth	8 3
Shoreham	7 0
Whitstable	6 0
Weymouth	8 0
Foreign.—Per Keel:—	
Barcelona	£17 0
Bordeaux	12 0
Boulogne and Calais	7 0
Cadiz	—
Cronstadt	—
Copenhagen	9 10
Genoa	17 0
Hamburg	—
Havre de Grace	—
Leghorn	17 0
Lisbon	11 10
Rotterdam	—
Stettin	—
Trieste	15 0
Venice	18 0

SUNDRIES.

Best Nstle. Fire-bks., p. 1000, £2 10s. to	£2 15 0
Cliff's Fire-bks. (at Wortley), p. 1000	2 15 6
Ingham's ditto (at Wortley), p. 1000	2 15 0
Farnley Iron Co.'s Fire-bks. (at Wortley), less discount	2 17 0
Fire-clay Retorts, p. ft. run, 8s. 6d. to	0 7 0
Tough Cake Copper, p. ton	76 0 0
English Pig Lead, p. ton	19 0 0
Welsh Bar Iron (in London), p. ton	6 10 0
Foreign Spelter, p. ton	20 10 0
English Block Tin, p. ton	107 0 0
Banca, p. ton	108 0 0
Tarred Rope Yarn, p. cwt.	1 0 0

Advertisements.

FOR SALE,

SECOND-HAND STATION-METERS AND GOVERNORS,

As under, all in excellent Working Order, equal to New, guaranteed.

STATION-METERS.

1,500 Cubic Feet per hour,		4-in.	Connexions.	6,000 Cubic Feet per hour,	8-in. Connexions.
2,000	,,	,, 4-in.	,,	8,000 ,,	,, 8-in. ,,
5,000	,,	,, 8-in.	,,	12,000 ,,	,, 10-in. ,,

STATION GOVERNORS for 2, 5, 6, and 12 inch Mains.

APPLY FOR FURTHER PARTICULARS TO

GEORGE RAIT, MANAGING DIRECTOR,

GAS-METER COMPANY, 238, KINGSLAND ROAD, LONDON, N.E.

THE FARNLEY IRON COMPANY,

FARNLEY, near LEEDS,

In consequence of the increasing demand for their Retorts, have largely extended this branch of their Fire-Clay Works, and are now prepared to execute the most important orders, either for *home* or *export*, with great punctuality.

The Fire-Clay raised from the Farnley Estate (commonly called the Wortley bed) is unsurpassed by any other known in the district, and is peculiarly well adapted for Retorts, Gas-Ovens, and Fire-Bricks; and the F. I. Co. beg especially to invite those connected with Gas-Works, who have not yet used their Retorts, to be good enough to favour them with a trial.

The F. I. Cc. generally hold in stock, for immediate supply, Fire-Bricks of every size and kind—Tiles, Sanitary Tubes, Ornamental Terra-Cotta Ware White Facing Bricks, the White, Buff and Salt-Glazed Bricks, &c., &c.

Prices, Drawings, and all other information may be obtained by applying as above, or to

MR. SUTTON, THE HULL STORES, 46½, QUEEN STREET, HULL.

CANNEL COAL.

MESSRS. GRIFFITHS BROTHERS,
COPPA COLLIERY, MOLD,

Beg leave to call the attention of Gas Companies to the superior quality of their Cannel for gas-making purposes.

This Cannel produces in actual working, in iron retorts, 9200 cubic feet of 32-candle gas, and upwards of 11 cwt. of coke, and in clay retorts will produce 11,500 cubic feet of 25·9-candle gas.

Ports of shipment—Birkenhead or Connah's Quay.

Waggons supplied for delivery by railway to any part of England or Wales.

For particulars, prices, and rates of freight, apply to GRIFFITHS BROTHERS, Coppa Colliery, Mold, FLINTSHIRE.

CATHELS'S Patent Dry District GOVERNOR is the only perfect self-acting contrivance for regulating the pressures in the higher levels of a district.

CATHELS'S Patent Four-way Disc GAS-VALVE—ONE OF WHICH SERVES AS THREE ORDINARY VALVES—is the best Valve for gas-works.

For prices, &c., apply to the Manufacturers, Messrs. GUEST AND CHRIMES, ROTHERHAM.

CATHELS'S Patent Ribbed Gas Main- PIPES cost but about 1d. to 2d. per yard (depending on the size) more than Plain Pipes, and ensure PERFECT GAS-TIGHT CONNEXIONS with the Service-Pipes.

Apply to Messrs. BEGGS & SON, 37, Southampton Street, Strand, LONDON.

TO GAS ENGINEERS AND FITTERS.

Every Description of

GAS LANTERNS & REFLECTOR LAMPS

For Shop Windows kept in Stock.

W. DAVIS, 17, Wells Street, Oxford Street, LONDON, W.

Established 1820.

BECK'S

PATENT SLUICE & FIRE COCKS,

HYDRANTS, STEAM-FITTINGS,

PUMPS, FIRE-MAINS, &c.,

Suitable for Public Buildings, Warehouses, and Dwelling Houses.

A competent person sent to receive particulars for Plans and Estimates.

BECK AND COMPANY,
LIMITED,
Brass Founders, Hot-Water & Hydraulic Engineers,
130, GREAT SUFFOLK STREET,
SOUTHWARK, LONDON.

Mr. H. GORE,

CONSULTING GAS ENGINEER,

20, ALFRED PLACE, BEDFORD SQUARE, LONDON, W.C.

OXIDE OF IRON,

We are prepared to supply, on moderate terms,
HYDRATED PEROXIDE OF IRON (BOG OCHRE),
Same quality as supplied by us to several of the most extensive Gas Companies, and which has given entire satisfaction.

FRANCIS RITCHIE & SONS,
BELFAST.

BIRTLEY IRON WORKS,
CHESTER-LE-STREET,
DURHAM.

Manufactory for every description of Casting and Machinery for Gas-Works and Water-Works.

Warehouse in London for Cast-iron Pipes and Connexions of all sizes and in any quantity, Scott's Wharf, Bankside, Southwark.

Office in London, Mr. E. M. PERKINS, 101, Cannon Street, E.C.

CAST-IRON Retorts, Socket Pipes, with Syphons and all requisite Connexions, Lamp Columns, Wrought Iron Tubing, Valves, Street Lamps, Sight Holes, Furnace Doors, Ash Pans, Charging and Coke Shovels, IRON Pails and Coke Barrows, Cross Bars, Fire Pots, Pumps, Iron Borings.

PURIFIERS, CONDENSERS, and SCRUBBERS erected complete, or the materials supplied; with every description of goods in use by Gas-Works, in stock, on wholesale prices, at

Mr. LYNCH WHITE'S,
Old Barge Iron Wharf, Upper Ground Street,
LONDON.

C. A. S. VICKARY,

(ADMINISTRATRIX TO THE LATE JOHN VICKARY,)

GAS ENGINEER AND CONTRACTOR, IRON AND BRASS FOUNDER,

EXE ISLAND, EXETER,

Tenders her best thanks to the various Gas Companies in **England, Ireland, and Wales,** for the very liberal and kind support received by her lamented husband for the last **22 years,** during which period he erected and extended more than **200 Gas-Works.** She respectfully solicits a continuation of that support, and begs reference to the following testimonial:—

Plymouth and Stonehouse Gaslight Company.

Sir,—I have much pleasure in testifying that the 100-foot Telescope Gasholder and Cast-Iron Tank, erected by you for this Company in 1862, has given the highest satisfaction, and never required the slightest alteration or adjustment since its completion.

Mr. John Vickary. (Signed) PETER ADAMS, Chairman.

The late Mr. Vickary also erected a 100-foot Gasholder and Cast-Iron Tank at **Exeter;** an 80-foot Telescope Gasholder and Iron Tank at **Devonport;** a 90-foot at **Torquay,** &c., &c. At either of these works satisfactory references can be made.

C. A. S. V. begs particular attention to her **Improved Gas-Meters,** both **Wet and Dry,** the materials and workmanship of which are guaranteed of the very best description, and which have gained for her Meters so excellent a reputation.

RETORTS, DIP & ASCENSION PIPES, HYDRAULIC MAIN, CONDENSERS, PURIFIERS, STATION-METERS, GOVERNORS, VALVES, and GASHOLDERS,

Of any size, and every description of article required in Gas-Works supplied.

Mains, Tees, Connexions, and Syphons, from 2 to 12 in., always in stock, and supplied at Scotch prices.
Clay Retorts and Fire-Goods of every description.
Chandeliers and Gas-Fittings of the most modern designs.
Iron Pipe and Fittings, Service Cocks, &c.

Plans, Specifications, and Estimates for the Erection of New Gas-Works of any size furnished.

THE GAS-METER COMPANY

(LIMITED), LONDON,

(Successors to CROLL, RAIT, and CO., LONDON, and WEST and GREGSON, OLDHAM.)

MANUFACTURE

STATION-METERS & GOVERNORS

At their Oldham Establishment, which has long possessed the reputation of supplying this description of apparatus of the most perfect construction and appropriate design.

CONSUMERS GAS-METERS IN CAST-IRON & TINNED SHEET-IRON CASES.

STREET GOVERNORS, PRESSURE and EXHAUST REGISTERS, TEST GASHOLDERS,

AND EXPERIMENTAL GAS APPARATUS GENERALLY.

For information, &c., apply to

W. ARCHER, Manager, Meter Factory, OLDHAM;
OR TO
GEORGE RAIT, Managing Director, KINGSLAND ROAD, LONDON.

INVERKEITHING FIRE-CLAY WORKS.

WILLIAM FRASER,

Having recently greatly enlarged these Works, can undertake

CONTRACTS AT LOW PRICES TO ANY EXTENT.

FIRE-CLAY RETORTS WERE FIRST MADE AT HIS WORKS,

And to this Department great attention is paid. Wherever used they have given satisfaction.
He invites attention to the following certificates.

TESTIMONIALS BY SOME OF WM. FRASER'S CUSTOMERS.

I.—*The late* F. LYON, *Esq., Manager and Engineer of the Edinburgh and Leith Gas-Works.*

Edinburgh and Leith Gaslight Company, Edinburgh, March 13, 1855.

Dear Sir,—In reply to yours of the 10th inst., I have to state that we have used Fire-Clay Retorts, made at the Inverkeithing Works, for twenty-five years. For upwards of ten years, I may say, we used them exclusively, and found them give satisfaction. For the last fifteen years we have been getting a part of our clay retorts from other makers. We find yours to stand better than some, and equal to any we have yet tried.—I am, &c.,
FRAS. LYON.
Wm. Fraser, Esq., Inverkeithing.

II.—JOHN REID, *Esq., Engineer and Manager of the Edinburgh and Leith Gaslight Company.*

Leith, Jan. 29, 1867.

Dear Sir,—In compliance with your request, I hereby certify that I have employed Fire-Clay Retorts of your manufacture, both here and elsewhere, for upwards of twenty-four years, with much satisfaction. I find them capable of sustaining the highest working temperature, under which they last as well as any I have seen used. They are possessed of a special quality, by which the carbon which accumulates inside is very easily removable, without injury to the Retort itself; and the style of workmanship and finish is all that can be desired. I have no objection to your making use of this testimony, so far as you may think it useful in promoting your business elsewhere.—I am, &c.,
JOHN REID, Engineer and Manager.
Wm. Fraser, Esq., Inverkeithing.

III.—J. Z. KAY, *Esq., Founder and Engineer, Glasgow.*

Phœnix Iron-Works, Glasgow, Oct. 30, 1867.

When I was manager and engineer of the two Gas-Works in Dundee, I used extensively Fire-Clay Retorts manufactured by Mr. Fraser, Inverkeithing. They were also generally used in other works where I acted as consulting engineer. I have pleasure in stating that I consider Mr. Fraser's Retorts to be of a very superior quality, and are not surpassed by any of which I had experience. I have often had occasion to visit his works, and observed that special attention was paid to the manufacture of Retorts, which have been made there, with manifest success, for upwards of forty years. Gaslight Companies may order these Retorts with every confidence that they will give satisfaction.
J. Z. KAY.

IV.—*The Late Mr.* DOW, *Manager, Stirling Gaslight Company.*

Stirling Gaslight Company's Office, Jan. 29, 1855.

Dear Sir,—I have much pleasure in testifying to the excellence of the Fire-Clay Retorts made at the Inverkeithing Brick-Works.

I have used them constantly in the Stirling Gas-Works for upwards of eighteen years. *They last with me not less than four years. Some of them are now going the* SIXTH YEAR, and give uniform satisfaction.

From their greater durability, I prefer them to all other retorts I have tried, made by other celebrated makers.

I use those of the circular form, 14 inches diameter and nearly 4 inches thick, 9 feet long, and made in two pieces. Some approve of thinner retorts, and in one piece, but I find that kind suits me best, and order them so accordingly.

I have every confidence in recommending the Inverkeithing Retorts and other fire-clay articles manufactured there.—I am, &c.,
JOHN DOW, Manager.
Wm. Fraser, Esq., Inverkeithing.

V.—*Messrs.* R. TULLIS & CO., *Auchmuty and Rothes Paper-Mills.*

Auchmuty and Rothes Paper-Mills, Jan. 29, 1866.

We have used Fire-Clay Retorts, got from Inverkeithing, in our Gas-Works for the period of twenty years; and having found them to be of a quality uniformly good, we can confidently recommend them to others, believing them to be the best in the market.
R. TULLIS & CO.

VI.—JOHN ROBERTSON, *Esq., Manager, Kinross and Milnathort Gas-Works.*

Kinross and Milnathort Gas-Works, Jan. 29, 1867.

I feel happy at having the privilege to adhibit my name to the certificate in favour of your articles. In regard to the Retorts and other materials manufactured at your works, I can bear ample testimony to their superiority, as I have had the practical experience of working them for the last twenty-seven years.
Mr. Fraser, Inverkeithing.
JOHN ROBERTSON, Manager.

VII.—GEORGE AITKEN, *Esq., late Manager of Dalkeith Gas-Works.*

Dalkeith Gas-Works, Aug. 15, 1848.

I intend to be over in the course of a few days to order some more Retorts. You will, perhaps, be surprised to learn that some I got formerly have gone four years, and are still in good condition. They might go longer, with some repair, but I think it better not to risk them.
GEORGE AITKEN.
Mr. Fraser, Inverkeithing.

VIII.—A. M'PHERSON, *Esq., Manager, Perth New Gas-Works.*

Your Retorts in one piece give entire satisfaction.
Mr. Fraser, Inverkeithing.
A. M'PHERSON, Manager.

IX.—WM. M'KENZIE, *Esq., formerly of Cupar, now of Dunfermline.*

Gas-Works, Dunfermline, Oct. 31, 1867.

Retorts and other materials made at Inverkeithing Fire-Clay Works have been used almost exclusively at these works since their establishment, nearly forty years ago. My own experience of them, here and at Cupar-Fife, extends over fourteen years. These Retorts have invariably given me great satisfaction. They last well, and are quite equal if not superior in every respect to any others which I have used.
WM. M'KENZIE, Manager.

X.—WILLIAM HISLOP, *Esq., Manager of Falkirk Joint-Stock Gas-Works.*

Joint-Stock Gas-Works, Falkirk, March 22, 1854.

The Retorts which we got from you in November, '52, have been cooled down three times, and are still almost as good as that day they were put on.
WILLIAM HISLOP.

XI.—ROBERT DOUGLAS, *Esq., Manager of Gas-Works, Newcastle-on-Tyne.*

Newcastle-on-Tyne Gas-Works, Nov. 12, 1867.

Fire-Clay Retorts and other materials manufactured by Mr. Fraser, Inverkeithing, were very largely used at the Bankside and Vauxhall Stations of the Phœnix Gaslight Company for ten years, when I was superintendent at these stations. I used them previously, when manager of Cupar Gas-Works, Scotland. My experience of them extends to nearly thirty years. His manufactures are of so superior a quality that I can confidently recommend them. It appears to me his fire-clay is peculiarly suitable for making Retorts, and that he has benefited by his lengthened experience, In Scotland, Inverkeithing Retorts have, during forty years, justly maintained a high reputation, and are principally used on the east and centre of that kingdom. They have been introduced into various works, both in England and Scotland, where I was consulted, and always gave satisfaction.
RO. DOUGLAS.

XII.—D. HUNTER, *Esq., Superintendent, Phœnix Gas-Works, Greenwich.*

Greenwich Gas-Works, Jan. 31, 1855.

I used the Inverkeithing Fire-Clay Retorts at a work in Scotland, of which I was manager for several years, and can recommend them as equal in durability to any I have yet tried.
DAVID HUNTER, Superintendent.

XIII.—J. DOUGLAS, *Esq., Superintendent and Secretary, Portsea Island Gaslight Company.*

Gas-Works, Portsea, Nov. 12, 1867.

I have pleasure in stating that Mr. Fraser's Retorts have been used three years on these works; that I have also had experience of them in other places; that I find them carefully made and well burned; that, from the nature of the material and the manufacture, they are durable and easily heated; and that, while I rank them equal to any, I consider them superior to most that I have tried.
J. DOUGLAS, Superintendent and Secretary,
Portsea Island Gaslight Co.

XIV.—*Certificate by Managers and Secretaries of various Gas-Works, in* 1855.

Retorts and other materials manufactured at Inverkeithing Fire-Clay Works have been used in our Gas-Works for the period annexed to our names, and have given every satisfaction. We can confidently recommend them. We believe these Retorts are not surpassed by those manufactured at any other works. They generally last two, but sometimes three years.

Managers Names.	Gas-Works.	Number of Years used.
DAVID TAYLOR	Abernethy	2
WILLIAM GALLOWAY	Alyth	6
ALEXANDER M'EWAN	Auchterarder	8
D. KINNIMOND	Auchtermuchty	10
J. ADAMSON	Anstruther	10
J. ROSS MACVICAR, Secretary	Bridge of Allan	11
A. WATSON	Banff	10
J. G. SHEPHERD, Parish Clerk	Blairgowrie	10
JOHN ANDERSON	Bo'ness	10
JAMES BARCLAY	Brechin	10
GEORGE MYERS	Broughty Ferry	5
JOHN R. GARVIE	Burntisland	9
WM. MACKENZIE	Cupar	11
JAMES REID	Coupar-Angus	8
GEORGE BOYD	Crieff	10
MARTIN WATTS	Deanston	10
ROBERT CORTEEN	Douglas, Isle of Man	4
ABR. MALCOLM	Dumfries	1
GEORGE GORDON	Errol	2
WM. GALLOWAY	Eyemouth	6
ALEX. NIMMO, Secretary	Falkirk	12
JO. SMITH, Secretary	Falkirk Joint-Stock	6
ANGUS M'PHERSON	Forfar	14
JAMES WHITE	Ferry-Port-on-Craig	7
ROBT. RODGER, Treasurer	Falkland	10
EMANUEL & SON	Hambro Gaslight Assoc.	2
WM. STIVENS	Inverness	9
THOS. MELDRUM	Kennoway	1
JAS. TOD, Secretary	Kettle	6
WM. NORRIE	Kincardine	7
J. ROBERTSON	Kinross	15
JOHN MICHIE	Kirkcaldy	25
JOHN CUTHBERT	Kirriemuir	14
ROBT. CARLOW	Linlithgow	11
AND. CANT	Leslie	20
THOS. CARMICHAEL	Leuchars	2
JOHN DANSKIN	Leven	10
ROBERT REDDIE	Markinch	9
JOHN REID	Montrose	15
ALEX. CRAIGHEAD	Newburgh	6
L. MUNRO	Nairne	2
G. W. WILSON	Prinlaws Mills	5
THOS. WHIMSTER	Perth	28
R. FORD	Perth New Gas Compy.	8
R. MORTLAND	Stranraer	9
DAVID LISTER	Strathmiglo	9
JOHN DOW	Stirling	22
J. MACFARLANE	Thurso	7
DAVID HUNTER	Tullibody	9

TO GAS COMPANIES.

WANTED, an engagement as Contractor, Manager, or Working Manager in a gas-work making from 2,000,000 to 10,000,000 per annum. The Advertiser has had 13 years experience as Contractor and Working Manager in his present situation, and is thoroughly competent to set retorts, lay mains and service-pipes, do gas-fittings, take meters, keep accounts, and can produce first-class testimonials.
Address JOHN TAYLOR, Contractor and Manager, Gas-Works, Bethesda, Bangor, NORTH WALES.

BUXTON GAS, COKE, AND COAL COMPANY, LIMITED.

WANTED, immediately, by the above Company, a thoroughly competent MAN (permanent), to undertake interior fitting, meter repairs, main and service laying, and to inspect meters.
Applications, with testimonials, references, and wages required, to be forwarded to the MANAGER, Gas-Works, Buxton. None but undoubtedly steady men need apply. A married man preferred.
Buxton, Dec. 16, 1868.

WANTED, by the Advertiser, a situation as MANAGER of a small gas-work. Understands laying mains, services, fixing meters, and can do all repairs required on a gas-work, including smith's work. Eighteen years character.
Address MANAGER, Hants County Prison Gas-Works.

TO GAS COMPANIES AND OTHERS.

WANTED, by a practical Engineer, aged 34 years, a situation as Engineer and Manager, Deputy Engineer, or Secretary. Has had long experience in management of gas-works. Good practical draughtsman, with first-class references.
Address L. M., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

TO GAS COMPANIES.

WANTED, by a thoroughly practical Man, a re-engagement as WORKING MANAGER, who can set clay or iron retorts, work an exhauster, and do all repairs required on a gas-work, including interior gas-fitting and reading meter indices. Satisfactory reference as to character and ability.
Address D., 19, Cregoe Street, BIRMINGHAM.

WANTED, by the Advertiser, who is experienced, a re-engagement as MANAGER. First-class testimonials and references.
Address Mr. H. TAPLAY, Gas-Works, OSWESTRY.

THE Advertiser, who has had great experience in the erection of gas-works and the management of the same, and is thoroughly acquainted with gas-fitting, main-laying, &c., both in water and gas, and has had charge of large gangs of men at home and on the Continent, is desirous of obtaining a situation as Manager, or Yard Foreman, or Timekeeper on public works, &c. Has good reference.
Address W. H. V., 10, Norwich Street, CAMBRIDGE.

A Junior Clerk wanted immediately. He must write a good hand, be quick at figures, and have some knowledge of book-keeping.
Apply to the SECRETARY and MANAGER, Gas Company, Bromley, KENT.

A German Gas Engineer, who is well experienced in his trade, and knows very well the English, French, and Spanish languages, is looking for employment where knowledge of languages is necessary.
Communications to be addressed to Mr. EUGEN FORT, LEIPSIC.

BUENOS AYRES GAS COMPANY.

TO CONTRACTORS FOR GAS-WORKS, &c.

WANTED, a Gas Apparatus for making gas from oil, grease, or carcase of animals, to supply 6000 burners at 10 feet gas per day, with two Gasholders, Station-Meter, Governor, Purifier, &c.; also the fire-bricks required, and the tools and everything necessary to constitute a complete work, in the best working order. The apparatus to include an extra furnace and bed of retorts, and be made so as to serve for making gas from coals (should it be required), without alteration, and everything to be of the best quality; also (with price separately) 4500 ft. iron main-pipe, the same diameter as that used for the works, and eight crosses—two the same as the main-pipe, three diminishing to 4-in., and three 3-in.—and all the drawings and explanations necessary for setting up the works.
All to be delivered, properly packed for exportation, free on board, at the Wellington or Bramley Moore Docks, Liverpool. The apparatus, &c., to be examined by a competent person or persons, named by the undersigned, whose approval will be requisite before receiving them.
Tenders for the above, stating the time required for executing the order, will be received by the undersigned up to the 8th of January, 1869. The undersigned does not pledge himself to receive the lowest tender.
LOUIS WILDE, Agent for the Buenos Ayrés Gas Company, Weaver Buildings, Brunswick Street, LIVERPOOL.

GAS-WORKS FOR SALE, either attached to the freehold or for removal. Gasholder for 4500 ft., with cast-iron tank, and ornamental columns and framing; 5 Retorts and fittings complete; Condenser, 2 Purifiers and Washers, and 150-light Meter; set of 3 Barrel Pumps.
Application, personally or by letter, addressed to the SECRETARY, Hodges's Distillery Company, Limited, Church Street, Lambeth, LONDON.

GAS EXAMINER FOR THE CITY OF LONDON.

THE SPECIAL GAS COMMITTEE
OF THE
COURT OF COMMON COUNCIL
Are prepared to receive
APPLICATIONS
For the Office of
GAS EXAMINER for the CITY OF LONDON,
Under the Provisions of the City of London Gas Act, 1868.

The Gas Referees have appointed four testing-places, and the Gas Examiner will be solely responsible for the performance of the duties of the office in accordance with the provisions of the Act referred to.
The person to be appointed will be required to be of high standing as an analytical chemist, and to have had considerable experience in the examination of gas, both as to purity and illuminating power.
The Committee will select two candidates, whose names will be submitted to the Court of Common Council for one of such candidates to be elected to the office, and the Committee are prepared to recommend to the Court of Common Council that the salary of the Gas Examiner shall be £500 a year, such salary to include all payments made by him to his assistants.
Testimonials as to the knowledge and experience of the candidates in this department of chemical science must be sent to the Town-Clerk on or before Monday, the 4th of January next.
It is particularly requested that candidates will *not* canvass the members of the Committee.
Further information may be obtained on application at the Town-Clerk's Office, Guildhall, between the hours of eleven and four o'clock.
Guildhall, Dec. 14, 1868. WOODTHORPE.

EPPING GAS COMPANY, LIMITED.

THE Directors of the above Company are prepared to receive applications from parties desirous of seeking the appointment of GAS ENGINEER and GENERAL MANAGER of their works, situate at Thoydon Garnon, in the county of Essex.
A substantial residence adjoining the works will be provided rent free, together with gas laid on, and a reasonable quantity of coals for consumption, to be decided by the Directors for the time being. The Engineer will also be allowed an assistant during the winter months. The salary will be at the rate of 23s. per week, but two months notice must be given by either party desiring to terminate the engagement.
The party appointed will have to devote his whole time to the service of the Company, and he will be required (*inter alia*) each quarter day to take the quantities of the gas consumed by the different customers, and to furnish a correct account thereof to the Secretary in a book to be provided for the purpose.
Testimonials of recent date as to character and competency to be addressed to me, the undersigned, under seal, and endorsed on or before the 31st of December inst.
By order,
JOHN W. WINDUS, Secretary.
Epping, Dec. 16, 1868.

TURNER & ALLEN'S
NEW DESIGNS
FOR
Plain & Ornamental
LAMP-POSTS,
DWARF
GAS PILLARS,
LAMP BRACKETS,
LAMPS,
LANTERNS, &c.

GASELIERS,
CORRIDOR AND LOBBY
LAMPS,
GARDEN
AND
DRINKING FOUNTAINS.

COMPLETE PATTERN
AND
PRICE BOOK,
3s. 6d. in stamps.

TURNER AND ALLEN,
Engineers, Founders, &c.,
201, UPPER THAMES STREET, LONDON, E.C.

WANTED to purchase, two second-hand PURIFIERS, about 4 ft. square, and a STATION-METER to pass about 350 ft. per hour.
Send price and particulars to W. E. WILLIAMS, Regent Place, CHELTENHAM.

CROYDON COMMERCIAL GAS & COKE COMPANY.

TO BE SOLD, in consequence of the completion of the Company's new works:—
Two of Burton and Co.'s Vertical ENGINES, 5-horse nominal power, and 2 of Beales's EXHAUSTERS, for 10,000 ft. each per hour, in good working condition.
A Cast-Iron TANK, 30 ft. diameter, 15 ft. deep, with columns, inlet and outlet pipes, valves, &c.
A CONDENSER BOX, 24 ft. by 6 ft. by 3 ft. 6 in., with 28 8 in. pipes, &c., complete.
A GOVERNOR complete, with delivery-box, 3 valves, and connexions complete.
Miscellaneous Castings, Valves, &c.
Applications to be made to the Secretary, 23, George Street, Croydon. WILLIAM PURVIS, Secretary.
Nov. 1868.

BARRELS.

TO BE SOLD cheap, several hundred good empty BARRELS, 30 to 35 gallons, suitable for Tar.
Apply to S., 15, Annette Road, Holloway, LONDON.

GAS-WORKS.

THE Directors of the Oswaldtwistle Gas Company, Limited, are prepared to receive—
1. Tenders for the erection of the whole of the Buildings and Tanks required for their Gas-Works.
2. Tenders for the Gas Apparatus and the whole of the Iron Work.
Plans and specifications may be inspected on and after the 21st inst., at the Office of the Company, 189, Union Road, Oswaldtwistle, near Accrington, Lancashire, and at the Office of the Engineer, Mr. W. C. Holmes, 56, Gracechurch Street, London.
Sealed tenders, addressed to the undersigned, will be received up to the 6th day of January next.
The Directors do not bind themselves to accept the lowest or any tender.
WILLIAM GOURLAY, Secretary to the Company.
Oswaldtwistle, Dec. 16, 1868.

NOS. 300, 345, & 371
OF THE
JOURNAL OF GAS LIGHTING.

DOUBLE the PUBLISHING PRICES will be given for clean copies of the above Numbers.
Address same to WILLIAM B. KING, 11, Bolt Court, FLEET STREET, E.C., who will send stamps per return.

LINTZ COLLIERY COMPANY.
FIRE-BRICK AND RETORT WORKS.

THE LINTZ COLLIERY COMPANY
Beg most respectfully to draw the attention of
GAS COMPANIES, FURNACE BUILDERS,
FIRE-BRICK DEALERS, & OTHERS,
To the superiority of their
FIRE-CLAY GOODS,
Where resistance to heat is of paramount importance, an ample guarantee of which is in the fact of their extensive use by most of the Iron Manufacturers in the North of England.
Not only is the quality of the Fire-Clay inferior to none in the northern Coal-field, but the greatest care is taken in selecting it. It is all hand picked, and well weathered before use.
All orders for
FIRE-CLAY RETORTS of any shape or size,
FIRE BRICKS, &c.,
Will meet with prompt attention.
LAYCOCK'S GARESFIELD COKE.
OFFICES: LINTZ COLLIERY, BURNOPFIELD, Co. DURHAM; AND QUAYSIDE, NEWCASTLE-ON-TYNE.

CANNEL COAL.—The West York-shire Iron and Coal Company, Limited, beg to draw the attention of Gas Companies to their Cannel, of which the following is the analysis made by W. Huggon, Esq., F.C.S.:—

Yield of gas per ton	10,296 cubic feet.
Illuminating power rather over	21 sperm candles.
Yield of coke per ton . . .	12 cwt.

The actual working, as reported by one of the largest gas companies in Yorkshire, gives results still more favourable, viz—

Yield of gas.	10,416 cubic feet.
Illuminating power . . .	21·89 sperm candles.
Coke	The same.

We add from the same source the capabilities of the common gas coal—

Yield of gas.	10,080 cubic feet.
Illuminating power . . .	14·41 sperm candles.
Yield of Coke	13 cwt.

COLLIERIES—WEST ARDSLEY, near LEEDS.
For further particulars, address to the Office of the Company, 15, York Place, LEEDS.

POPE & PEARSON'S GAS COAL.
We have now the authority of several of the most eminent Gas Engineers of London in stating that our Coal yields *in practical working over* 10,000 *cubic feet of gas, with an illuminating power of* 16 *candles.*
One ton yields 12½ cwt. of good coke. This Coal can be shipped from Hull, Goole, Liverpool, Morecambe, and Barrow.
For further particulars, apply to POPE AND PEARSON, West Riding and Silkstone Collieries, near LEEDS.

OLD WEMYSS CANNEL COAL.—Yield of gas per ton, 12,896 cubic feet; illuminating power, 31·75 standard candles. Port of shipment, Wemyss.
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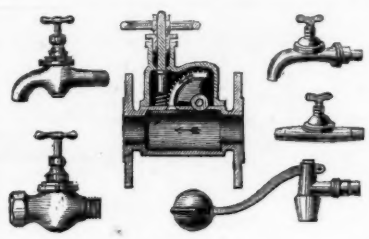

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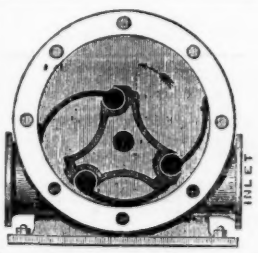

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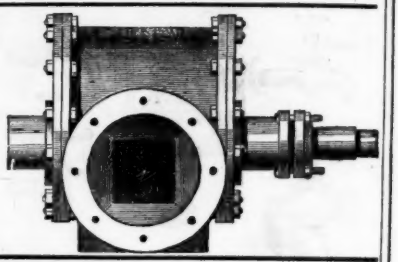

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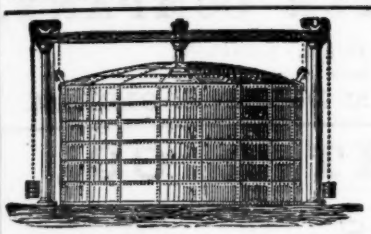

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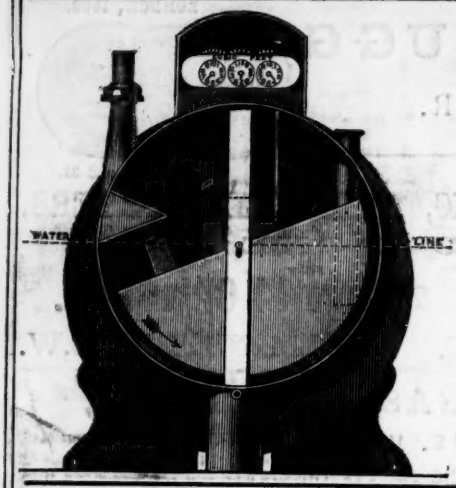

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London: Printed by WILLIAM BOUGHTON KING (at the office of Clayton and Co., 17, Bouverie Street, Fleet Street); and published by him at No. 11, Bolt Court, Fleet Street, in the City of London.—Tuesday, December 22, 1868.